

SHANKKAR AIYAR



THE
**GATED
REPUBLIC**

INDIA'S PUBLIC POLICY FAILURES
AND PRIVATE SOLUTIONS



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Prathamesh Sri Siddhi Vinayak

For
Rukkumani and Chandrasekar
for being there, always

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PREFACE

Public Failures, Private Solutions

The truism about India is that for everything that you see, that you hear, frequently the opposite is equally true.

India's scientists successfully launched the Mars Orbiter Mission, executed a perfect slingshot to place it in orbit and left the world in awe – at a price less than what it cost Hollywood to produce the Oscar-winning movie *Gravity*. Lunar explorations continue apace with Mission Chandrayan 3 to be launched in November 2020. India's engineers are designing and executing the world's highest railway bridge over the river Chenab in Kashmir. India's Election Commission manages the exercise of franchise in the world's largest democracy, enabling over 910 million citizens to vote, whether at 15,000 feet above sea level in Anlay Phu in Ladakh or 35 kilometres deep into the Gir forests.

And yet, the above maxim about the multiple truths that are India is unfortunately proven by the sordid state of affairs in the delivery of public goods and services. The country's ability in dealing with complexities and scale, alas, has not resulted in creation of capacity for transformative change. Truth be told, our many governments – central, state and local – have flailed and failed in delivering basic governance.

The promise of piped drinking water continues to be a pipe dream. Households and businesses spend hours cursing power outages despite the claims of surplus power. The inadequacies of preventive and primary health care systems render the poorest the most vulnerable. The millions coming out of India's broken school education system lack the rudimentary comprehension of the basic

three 'R's – reading, writing and arithmetic. And the security of homes/businesses depends on outsourced private security contractors.

It used to be said that India is a nation of many nations. Fact is, India is morphing into a nation of gated republics. Slowly, these gated republics are spreading across the landscape and their tell-tale signs are evident in anecdotal snapshots. The empirical picture is changing at a glacial pace and the scale is momentous. Year after year, governments launch new avatars of old promises to deliver public goods and services and taxpayer money is poured into these avatars, but at every milestone of per capita income and affordability, there are public policy failures.

The many failures of public policy are propelling a ceaseless secession. The term 'secession' owes its Latin origins to plebeians withdrawing from ancient Rome to force patricians to address their grievances. Early settlers, said Jean Jacques Rousseau, resolved disagreeable conditions within groups by withdrawing from one and seeking another. ¹

The choice before India's denizen is to grieve, grate and grimace, or get out. In his seminal tome *Exit, Voice, and Loyalty*, Albert O. Hirschman points out, 'Once this avoidance mechanism for dealing with disputes or venting dissatisfaction is readily available, the contribution of voice – that is, of the political process – to such matters is likely to be and remain limited.' ² The voice of the average Indian is not heard and the wait has been too long. And so Indians are desperately seceding, as soon as their income allows, from dependence on government for the most basic of services – water, health, education, security, power – and are investing in the pay-and-plug economy.

In the last decade, total government expenditure, both central and state, has shot up from Rs 18.52 trillion in 2009 to Rs 53.6 trillion in 2018–19. That is Rs 6,120 million of taxpayer monies per hour, every day. Over one-fourth, or 26 per cent, of this money is devoted to what the government defines as allocation for delivery of social services. The expenditure on education has shot up from Rs 1.62 trillion to Rs 4.41 trillion in ten years, yet more parents are pulling their children out of government schools and sending them to

private ones. Allocations for health have more than trebled from Rs 742.73 billion to Rs 2.25 trillion between 2009 and 2018. Despite this, nearly 70 per cent of people prefer being treated by private healthcare service providers. ³ This pushes millions below the poverty line as they borrow to pay for healthcare, triggering catastrophic costs for families. ⁴ That there is this continuing exodus even as the government is allocating more and more money has led public-policy pundit and economist Lant Pritchett to ask in the context of delivery of public services if ‘India is a flailing state?’ ⁵

The system is wracked by a curious dysfunction – there is too much government and too little governance. There are the passive government failures resulting in inferior outcomes as well as active policy failure, where the design and implementation of policy results in outcomes that worsen the situation.

During the research for this book, what has been intriguing to learn is how taxpayers and other citizens have internalized the incapacity of the state to deliver public goods and services. Millions are opting out mentally from holding governments accountable and are turning to private service providers, despite the double whammy of costs.

Central and state governments harvest revenue by taxing income and consumption. Overall tax collections between 2009–10 and 2018–19 have more than trebled from Rs 9.84 trillion to Rs 34.94 trillion. ⁶ The primary imperative and obligation of the state is to deliver education, healthcare, water supply, electricity and security.

In reality, parents of over 75 million children in private schools are dealing with the cost economics of education, millions are choosing to seek healthcare from private providers, and households are dependent on inverters. They are paying for services they have already been taxed for. The secession is not by choice but by compulsion and in sectors which form the crucible of economic development.

The normalization of failure is accompanied by misplaced notions of what constitutes a big government. A fallacious and gratuitous explanation often used is that it is better that these services are offered against payment by private providers. The popular

Thatcherism, ‘Government has no business being in business’, is being distorted in perverse persuasion. True, government must not run commercial enterprises such as airlines and hotels. But when did the moral obligations of government – providing basic amenities to taxpayers and citizens – get defined as business?

South Korea, Japan and Finland have good education systems and these are run by their governments. Canada has a good healthcare system and it is run by the government. Singapore and Israel are innovative in water management and their governments are at the forefront of it. Top power companies – SGC China, Enel Italy, EDF France, Tepco Japan and Kepco Korea – are owned by national governments. ⁷ Policing and security is an essential public service provided by governments across the globe.

A lucid construct of the role of the state is drawn up by Adam Smith in *An Inquiry into the Nature and Causes of the Wealth of Nations*. Smith says the sovereign or the government has three duties of ‘great importance’ to attend to. ‘First, the duty of protecting the society from violence and invasion of other independent societies; secondly, the duty of protecting, as far as possible, every member of the society from the injustice or oppression of every other member of it, or the duty of establishing an exact administration of justice; and, thirdly, the duty of erecting and maintaining certain public works and certain public institutions which it can never be for the interest of any individual, or small number of individuals, to erect and maintain; because the profit could never repay the expense to any individual or small number of individuals, though it may frequently do much more than repay it to a great society.’ ⁸ Essentially, the obligation of providing education, health, security, water and electricity squarely rests on the state.

The history behind the idea of a nation state has gone through evolutionary and revolutionary iterations where the role of the state has been emphasized and re-emphasized. The idea of the state dates back 10,000 years to Mesopotamia and has evolved since. It was Thomas Hobbes, founder of the concept of the Leviathan, who argued that society without order of a state would descend into ‘*bellum omnium contra omnes*’ or ‘the war of all against all’. John Locke, who propounded the social contract theory, believed the role

of government was to protect its citizens' unalienable rights of life, liberty and property. Thomas Paine, in the treatise *Rights of Man*, declared that welfare is not charity but an irrevocable right. And Beatrice Webb, the patron saint, so to speak, of the welfare states visible across the world, crafted the blueprint that called on governments to provide for an 'enforced minimum for a civilized life'.

There are good reasons why Victor Hugo evangelized the value of education in *Les Misérables* ; why the US and Europe went for universal education; or why a primary focus of Meiji Restoration was on education. Towards the end of the nineteenth century, elementary education was not just free, it was also made compulsory. The School Medical Service was the early avatar of the National Health Service in Britain.

Every modern-day, global economic power focused on education and health during their rise in power and status. 'The legitimate object of government,' Abraham Lincoln said, 'is to do for a community of people whatever they need to have done but cannot do.' These imperatives, among others, were addressed through political agency. The US had three successive programmes – the New Deal of Franklin D. Roosevelt, the Fair Deal by Harry Truman and the Great Society agenda, under which Lyndon B. Johnson expanded education and healthcare as a strategy to reduce poverty.

The Gated Republic is an enquiry into the history and politics of public policy and the anatomy of failure. Part IV of the Constitution of India, the Directive Principles of State Policy, in Article 38 (1) states: 'The State shall strive to promote the welfare of the people by securing and protecting as effectively as it may a social order in which justice, social, economic and political, shall inform all the institutions of the national life.'

Seven decades after Independence, the piety of the promises made by the founding fathers has paled. Latter-day politicians and governments are blithely ignoring their responsibilities and Indians are paying the price, literally.

Can India vault orbits to a \$5 trillion economy and develop and progress without a healthy and educated workforce, all without clean water, reliable power and security?

1

WATER

Pipe Dreams

Nayi Duniya, i.e. New World. Imagine living in Nayi Duniya in the Bundelkhand region of India's most populous state of Uttar Pradesh. There is no water to drink nor for daily ablutions. The closest source of fresh water is a thinning stream four dusty and unpaved kilometres away. Imagine a walk to it and back in the Bundelkhand summers when temperatures tend to soar above 45° C.

You could borrow water – from a kind neighbour, for instance – but it has to be returned in three hours, that too twice the borrowed quantity – a 100 per cent return on capital within 180 minutes. ¹

Unsurprisingly, Bundelkhand – where 20 million people live – is among India's hinterlands where young men cannot find brides not only from other regions but also their own. Being subjected to such hard labour and finding and fetching such a scarce resource has seen wives desert their husbands and otherwise happy homes. This Nayi Duniya, along with others like it, survives in its own time warp.

Imagine living in Araria in north Bihar, swinging like a yo-yo between droughts and floods. In 2017, till 11 August, it was among the thirty-odd drought-hit districts of the state. On 12 August, Araria found itself on the list of flood-affected districts in Bihar. This peculiarity of extremes – too much or no water – persists across Bihar. Parts of the Pashchim (west) Champaran area in Bihar could be flood-hit whereas other parts have deficient rainfall, all at once. At around the same time, in mid-August for example, trains running in Poorvi (east) Champaran could be cancelled due to floods. At

minus 46 per cent of average rainfall, it would also be the district with the highest rainfall deficit in the state. ²

Of the thirty-eight districts in Bihar, twenty-six are classified as prone to floods. ³ The history of the region also proves that many of these districts, almost a dozen, are also vulnerable to droughts. And this is almost an annual pattern of water woes. The tragedy of it is lost; the irony of it is ignored. In August 2002, then Chief Minister of Bihar Rabri Devi met then Prime Minister Atal Bihari Vajpayee twice – first for drought relief and then for flood relief.

Imagine living in Mawsynram in India's north-eastern state of Meghalaya. Listed among the rainiest places on earth, it receives around 467.44 inches – or 11,873 mm – of rainfall annually. That's roughly 39 feet or 11.8 metres of rain – heavy sheets of water for over seven months of the year, clattering so loudly on roofs that conversations within homes are inaudible. ⁴

People pad their roofs with hay, grass and other materials to attempt decibel-level reductions; schools declare holidays when there is '*slap khyndai miet khyndai sngi*' or 'rain of nine nights and nine days'. ⁵ Students also get a good-weather holiday when it doesn't rain, perhaps just to celebrate the absence of the usual low-hanging clouds winding through class rooms and living rooms when visibility is sometimes less than five feet. Mawsynram receives more rainfall in a year than all of India does in nearly a decade, or Rajasthan would in thirty-three years. ⁶ And yet, when it stops raining after October at the dawn of winter in Mawsynram, its people must make do with a rationed quota of water to drink, cook and bathe. Two hours in the morning and sometimes an hour or so in the evening.

Now imagine being some kilometres east of Mawsynram. Imagine being in Cherrapunji, also known as Sohra in the East Khasi Hills, which was designated as the wettest place in the world till a few years ago. Cherrapunji's rainfalls have established their own records: maximum rainfall in a month (370 inches in just one July), 26,461 mm in a year in 1860-61. British records note Cherrapunji as receiving 1,042 inches of rain every year.

Cherrapunji is now called a ‘wet desert’. Current rainfall is around 450 inches or 11,430 mm annually, but there is no water once it stops raining. Residents of Cherrapunji get water for roughly an hour per day, and it gets worse in the winter. ⁷ Those who can afford it, pay Rs 250–350 for a few hundred litres.

Imagine being in what is called the Cherrapunji of south India. In the panchayat of Agumbe (immortalized in R.K. Narayan’s *Malgudi Days*) in Karnataka’s Shivamogga district, there are the famous waterfalls such as Onake Abbi, Barkana and Jogigundi along with the Someshwara Wildlife Sanctuary and Malanadu cuisine. Busloads of people travel to Agumbe during the monsoons to romance the rains. Despite 7,700 mm of rainfall every year, in 2017, the nearby riverbeds of Malathi, Seetha and Varahi were dry and pock-marked with over 100 borewells and shallow ponds dug by the administration. Like the residents of Cherrapunji, those in Agumbe were parched because there wasn’t enough water. ⁸

In February 2018, the British Broadcasting Corporation (BBC) put Bengaluru, the capital of Karnataka and India’s Silicon Valley, on a list of eleven cities likely to run out of drinking water by 2020. ⁹ Between 2001 and 2012, the city’s population doubled from five million to twelve million, but supply scarcely kept pace with demand. Ninety per cent of the 476 lakes in the city are choked with domestic waste and construction debris. ¹⁰ This had been feared and foretold by the World Bank in 2014, which had warned that population and demand would outstrip supply and had suggested several measures. ¹¹

A series of committees have studied the slow death of lakes in Bengaluru since 1986. ¹² But the institutional structure is such that it’s not swayed by facts since its multi-layered bureaucracy lends itself to delays and denial. By 2030, Bengaluru’s population is expected to touch twenty-one million, for which the city is expected to need 51.3 thousand million cubic feet of water per year. That’s approximately enough water to fill 5.8 lakh Olympic-size swimming pools, each holding roughly 6.6 lakh gallons of water. Or, put simply, 14,54,91,95,77,896 one-litre bottles of water.

Water woes are about to get worse, be it across India's cities or tier-II towns and villages. A report by the Niti Aayog, the Government of India's think-tank, states, '54% of India's groundwater wells are declining, and 21 major cities are expected to run out of groundwater as soon as 2020, affecting 100 million people.' [13](#)

The state of Tamil Nadu, which has multiple disagreements over the sharing of river water with its neighbouring states, has to find water for Coimbatore, Erode, Madurai, Perambalur, Ramanathapuram, Sivaganga and Pudukkottai, all of which, along with Chennai, are on the stress list. The defining irony is that when there is no water-cut in Chennai, it makes for headlines and an official announcement at the ministerial level. [14](#)

Pune, the emergent IT hub in Maharashtra, appears to be dealing with water shortages in a somewhat surreal fashion. The local civic body, the Pune Municipal Corporation (PMC), has virtually offshored its obligation to builders and developers with a kind of undeclared privatization of their water supply department. Builders file 'water affidavits' with the PMC while getting building clearances. In a water affidavit, the builder takes on the onus of ensuring supply of water from the PMC. To bridge the gap between poor supply and demand, the builder enters into deals with tanker-water suppliers, leaving buyers of flats in those buildings high and dry after they have moved in, particularly in Pune's blazing and increasingly dust-filled summer months, to live with a service poor in both quantity and quality. [15](#)

Tired of complaining to the PMC, twenty-eight-year-old Balewadi resident Amol Balwadkar, since then a municipal councillor, filed a petition in the Bombay High Court asking for a stay on all new clearances till the PMC fulfilled its primary obligation of ensuring water supply. On 23 June 2017, the bench of Chief Justice Manjula Chellur and Justice Nitin Jamdar ordered a stay on clearances and the issue of occupation certificates in Pune's Baner and Balewadi areas. On 28 June, the court, in an amendment, directed PMC to file an affidavit through a responsible officer of the municipal corporation on the apartments which have been already occupied, as follows: 'Firstly, they must say whether the water

connections are given and whether those water connections are purposeful and functional.’ [16](#)

Turns out such ‘solutions’ to municipally created problems were not limited to Pune. The Thane Municipal Corporation (TMC) too was clearing building permissions without ensuring supply of water to those buying apartments. Advocate V.P. Patil, like Balwadkar, filed a petition seeking a stay on all new clearances, charging the TMC with denying water to entire societies and colonies, as also supplying less than the stipulated amount when it did allow some water through TMC-controlled pipelines.

In Mumbai, one of the few Indian cities with a reasonably well-laid grid for water and sewage, the boast of uninterrupted water supply is now a nostalgic memory. The Brihanmumbai Municipal Corporation annually spends over Rs 2,000 crore to distribute water to its residents. Sitaram Shelar, convener of Pani Haq Samiti, says, ‘Mumbai gets 97 per cent of its water through an elaborate pipe network from as far as 100 km, from the reservoirs of Bhatsa, Tansa and Vaitarna.’ [17](#) The city’s own rain-fed sources – rivers, lakes, ponds and wells – have either been constructed upon or are dry, choked or polluted.

In a sense, it is already Day Zero in Mumbai, but this is not manifest because nearly 42 per cent of the city’s millions live in slums, as per a 2011 census. While the city corporation supplies 3,800 million litres per day (mld) of purified water, nearly three million citizens are at the mercy of the mafia that collects around Rs 1,500 per 1,000 litres. Kirit Somaiya, a former member of Parliament (MP) from the Bharatiya Janata Party (BJP), estimates that the tankers are making roughly 50,000 trips every year. [18](#) There is also a parallel shadow economy system where water is procured by the mafia from the corporation on the basis of fudged claims.

Those Indians who live not too far from water bodies and are parched for usable water will vouch that their proximity to rivers or major reservoirs is no guarantee of assured supply. In January 2018, the Gujarat state government announced that it would stop providing water to industries and curtail the release of water to farmlands post March. It told local bodies to look for alternative sources as the water level at the Sardar Sarovar Dam over the

Narmada river – the lifeline for 131 urban centres and over 50 per cent of villages – was down to half in January. ¹⁹ The scarce reserves were being preserved to provide drinking water during summer. ²⁰

The spectre of water is scarcity. This is uniquely illustrated in Parasampura, located in Rajasthan's Ajmer district. Water is padlocked. Residents must padlock water drums and tanks. The village's panchayat advised them to instal individual locks to prevent water theft and resultant water wars. Water theft here has acquired the same status that cattle theft had in the novels on the wild west in the days of yore. The village gets water once a week. ²¹

Apart from preventive measures, citizens have also resorted to precipitative action for water. In Hyderabad, residents hijacked a 5,000 litre water tanker of the Hyderabad Metropolitan Water Supply and Sewerage Board (HMWSSB) that had come to their housing complex. In Navi Mumbai in Maharashtra, residents have complained about tanker operators siphoning from pipelines for sale to housing societies. Aggrieved women in Dhenkanal, Odisha, forced engineers out of the office of the water supply department to check tube wells. ²² In Latur, Maharashtra, authorities had to impose a curfew to prevent water riots. In fact, Section 144 of the Criminal Procedure Code – a ban on the assembly of more than four people – is now part of the legal furnishing used to manage water scarcity in many towns and cities in India.

In May 2018, six villages in Maharashtra, with a population of 30,000, told both political parties, the BJP and Congress, to not bother campaigning in their areas as they were boycotting the by-elections for the Bhandara–Gondia Lok Sabha seat. ²³ Why? Because this was the only way left for them to draw the attention of the local and state authorities to the lack of water supply.

In the summer of 2019 actor Leonardo DiCaprio's social media post brought global attention to how the waterless residents of Chennai had to wait for hours just to get government water-tankers. Outrage resulted in police intervention, IT companies cut operational hours and, in some parts of the city, restaurants started using disposable plates. ²⁴

The factoids and the locales – from Araria to Agumbe, Bundelkhand to Bengaluru, Champaran to Cherrapunji – reflect the stark reality of a national water crisis thriving at the intersection of circumstance and callousness. It's almost pitiless, this apathy of India's contemporary politicians, the slothful administrators and the lack of empathy among elected representatives for the people who vote them into power.



The tragic irony is that the centrality of water for growth and development had been recognized by politicians even before Independence.

As early as August 1937, after the formation of provincial governments following the enactment of the Government of India Act, 1935, and subsequent elections, the Congress Working Committee (CWC) passed a resolution recommending 'the appointment of a committee of experts to consider urgent and vital problems, the solution of which is necessary to any scheme of national reconstruction and social planning'.

The CWC called for the organizing of 'comprehensive river surveys for the formulation of a policy to prevent disastrous floods, to utilize the water for the purposes of irrigation, to consider the problem of soil erosion, to eradicate malaria, and for the development of hydro-electric and other schemes. For this purpose the whole river valley will have to be surveyed and investigated, and large-scale state planning resorted to'. ²⁵ But the lofty ideals couldn't travel far, even though the Congress instituted a National Planning Committee, with Jawaharlal Nehru as the chairman. Provincial governments resigned and the British government simply shelved the plans.

The importance of water returned on the agenda in 1944, with the Health Survey and Development Committee, aka the Bhore Committee, specifying, 'The provision of safe water supply should receive the highest possible priority from the administration responsible for the welfare of its people. This has been recognized by every civilized country in the world.' The report observed,

‘Protected water supplies are available only in the larger towns and cities and they serve only small proportions of the population in individual provinces.’ Further, it was said that measures required for the control of diseases include ‘provision of protected water supplies, the satisfactory disposal of night soil to prevent contamination and sanitary control over the production, sale of food’. [26](#)

India’s water policy has come together from three streams: the traditional, the colonial and the post-Independence approaches. Traditionally, at the village level, water was managed by communities. Kings were obliged to develop waterworks, collect fees for crossing waters, destroy embankments that were illegal, discourage diversion or obstruction, impose social and economic costs on polluters, make water theft punishable and pass community laws on waterbodies to mark boundaries. The Mughals didn’t mess with or interfere with the existing system and neither did the British till the 1857 mutiny.

Post 1857, the British focused on feeding the supply chain of the industrial revolution. [27](#) They instituted laws on embankments, use of canals for transport and fisheries, implemented regulations underlining the rights of landowners to surface water (including riparian rights) and guaranteed unlimited right to groundwater in their property by enacting the Indian Easements Act (1882). The British also established the right of the government over all rivers, channels and lakes with the Northern India Canal and Drainage Act (1873).

A critical contribution of the colonial legacy is a report on the state of drinking water and sanitation across India by the Royal Commission on India. In November 1862, Florence Nightingale, the famous ‘Lady with the Lamp’, wrote a letter to Lord Stanley, MP and president of the Royal Commission on India, after reviewing the feedback collected from various army camps, barracks and cantonments. The letter, over fifty pages long, greatly details what was and what needed to be done. The top two causes of disease, she pointed out, were ‘bad water’ and ‘bad drainage’. Where tests were used, the composition of the water read like a very intricate prescription, containing nearly all the chlorides, sulphates, nitrates

and carbonates in the pharmacopoeia, besides silica and large quantities of organic matter.

Some of Ms Nightingale's observations on some of the stations:

- Bangalore: The Ulsoor tank, used for drinking, is the outlet for the whole drainage of a most filthy bazaar of 1,25,000 inhabitants.
- Secunderabad: As much as 119 grams of solid matter and as it would appear 30 grams of organic matter per gallon are found in the water in wells and tanks.
- Asseeghur: The same tank is used for drinking and bathing.
- Belgaum: The water is 'raised in leather skins by bullocks, emptied into troughs and thence conveyed by water carriers.'
- Kirkee: No such thing as a pump is known. The government pays Rs 617 per (hot) month to water carriers.
- Cochin, in the Madras presidency: The water is unfit for use from privy infiltration. Drinking water is brought daily from a distance of 18 miles. The same tank is used for bathing and drinking.
- Madras and Wellington are literally the only stations where anything like lavatories and baths are known, either in barrack or hospital. [28](#)

After Independence, on 16 June 1948, the Government of India appointed the Environmental Hygiene Committee to review and make an overall assessment of country-wide problems. Specifically, the committee was tasked with the investigation of environmental hygiene with reference to town and village planning, water supply, general sanitation (including conservancy and drainage), pollution, disease control and regulation of trade. The committee, chaired by B.C. Dasgupta, presented its 208-page report in October 1949, detailed with dos and don'ts. It said, 'As a long-term plan to be completed in forty years, we would suggest the extension of the benefits of protected water supply to at least 90 per cent of the population in India.'

Water management, as an all-encompassing issue and a driver of great benefits and growth to his countrymen, had been a major concern of India's first prime minister, Pandit Jawaharlal Nehru. Soon after Independence, on 18 January 1948, during his radio show, he candidly spoke about the many schemes and programmes for development that remained on paper. 'It is time that we gave effect to them. There are among them great river-valley schemes, which would not only irrigate the land, prevent floods, produce hydroelectric power and prevent malaria and other diseases, but also produce conditions for the rapid development of industries and modernization of our agriculture. Do you realize that India is heavily populated, but still has vast tracts of land where no man lives, because these tracts have no water or the soil requires treatment?' [29](#)

A few months later, addressing a conference of irrigation engineers, Nehru said, 'My attention is concentrated on that huge block of massive mountains called the Himalayas, which guard our north-eastern frontier. Look at them. Think of them. Can you think of any other part of the world similar to it in extent, which is as great a reservoir of power, of potential strength and power? I know of no other place in the world which has as much tremendous power locked up in it as the Himalayas and the water which comes to the rivers from them. How are we to utilize it? There are many ways. Essentially, it is the job of the engineers to tap this tremendous reserve of power for the benefit of the people.' [30](#)

On his first trip to the US as prime minister in October 1949, Nehru prioritized time for an educational/instructional tour of the Tennessee Valley Authority. Speaking at the Chicago University on 27 October 1949, after his visit to Knoxville, Nehru said, 'Our primary concern in India today is to build this new India, to make it prosperous, to do everything which would enable the economy to improve, create more wealth and increase production. In doing that, we feel we should pay much more attention to what might be called the basic industries or certain basic things than to other rather superficial industries. Our first attention is paid, therefore, to certain river-valley schemes. Some of them are very big schemes – bigger than the Tennessee Valley Authority; many of them are smaller.

These river-valley schemes are multipurpose schemes – first of all, to avoid floods; secondly, to irrigate large areas of land for the production of food; thirdly, for hydroelectric power; then, also, to prevent soil erosion and malaria; and, ultimately, to help the growth of industry.’ [31](#)



Post-independence, dams became integral to the supply of water and, through them, the aspiration of prosperity for the new India.

The earliest idea of a dam has an interesting legend. An ICS officer, Sir Louis Dane, who went on to become the lieutenant governor of Punjab, saw a leopard leaping from one of the Sutlej river banks to the other. This inspired him to such a degree that he wrote a full note and submitted it on 8 November 1908. He proposed the dam be built at the intersection of the Suni and Badu gorges, exactly where the leopard, presumably effortlessly, had leapt. Dane followed this up with a detailed proposal on his note in March 1910. The government of that time did not take the same leap of faith and it concluded the costs were ‘prohibitive’. [32](#)

The idea was revived in February 1915 by F.E. Gwyther, then the chief engineer of Punjab. By 1919, he drew a detailed plan of the Bhakra Dam, to be located around 69 km from Ropar. The dam would be 120 metres high and the discharge would lead to an upper canal, a lower canal and a Yamuna canal. Since there was no power plant in the plan, the idea was again grounded. The 1919 plan, though, did trigger a series of follow-up reports: in 1924 by the chief geologist of the Attock Oil Company; in 1925 by the superintendent geologist; in 1927 by a committee including A.J. Wiley, consulting engineer on dams and irrigation of the US government, E.S. Pinfold of the Attock Oil Company and W.H. Nicholson, chief engineer of Punjab. The height of the proposed dam was raised to 150 metres.

New surveys and reports followed in 1932, 1939 and 1944, with each report adding and altering the design and technical parameters. The government consulted experts from the US, such as J.L. Savage, who was the chief engineer at the US Bureau of

Reclamation, and followed up with explorations as advised by noted American geologist F.A. Nickell. Between 1948 and 1951, the height of the dam was increased first to 487 metres, then to 512 metres, before being finalized at 207 metres. Though excavations were on during the period of the studies, work started on Bhakra Dam only in 1951. There were ten segments in the project, including Bhakra and Nangal dams, the canal network and the power generation and transmission units.

Such was Nehru's passion for the project that he visited the Bhakra and Nangal sites ten times before their completion. At the opening of the Nangal Canal on 8 July 1954, he said, 'Bhakra-Nangal is a landmark not merely because the water will flow here and irrigate large portions of Punjab, PEPSU [the Patiala and East Punjab States Union], Rajasthan and fertilize the deserts of Rajasthan, or because enough electric power will be generated here to run thousands of factories and cottage industries, which will provide work for the people and relieve unemployment. It is a landmark because it has become the symbol of a nation's will to march forward with strength, determination and courage.' [33](#)

Nehru believed that mega projects such as the Bhakra-Nangal complex and the Damodar river valley, like the Tennessee Valley Authority, would inspire the nation, propel development and alleviate India's problems. The Bhakra-Nangal project was completed and dedicated to the nation on 23 October 1963. In his evangelism for mega projects, Nehru characterized it as 'something tremendous, something stupendous, and something which shakes you up when you see it. Bhakra, the new temple of resurgent India, is the symbol of India's progress.' [34](#)

Nehru was well aware of the constraints India faced and even acknowledged them in public. An American writer wrote that India faced many difficulties, with the most acute among them being explainable in five words – land, babies, cows, water and capital. Even as he pointed out that the article had many errors, Nehru told Parliament that 'there is a great deal of truth in the concise analysis'. And yet, resource-starved India had focused on mega projects.

The importance of irrigation, power, industry and drinking water had been underlined in the very first Five-Year Plan. Between 1951

and 1960, India added 235 major dams across the country and another 504 large ones between 1961 and 1970. Of these, fifteen were deemed to be of national importance, with a storage capacity of over 56 billion cubic metres (bcm), including Bhakra in Himachal with a storage of 9.62 bcm, Gandhisagar in Madhya Pradesh with 7.32 bcm storage, Rihand in Uttar Pradesh with a storage of 10.60 bcm and Hirakud in Odisha with a storage capacity of 8.14 bcm.

For sure, the construction of dams and reservoirs enabled the generation of electricity and ramped up irrigation – gross irrigated area increased from 22 million hectares to 36 million hectares and the total cropped area from 131 million hectares to 165 million hectares between 1950 and 1970. But all the dams and reservoirs put together were not enough for populous and far-flung India. It wasn't just enough to create storage but also to make water available to people, particularly those in the rural areas. Of the 5,67,000 villages in India, only 1.9 per cent or 11,000 villages had piped water in 1961.

By the late sixties, the issue of providing the very basic service of drinking water had become a political hot potato. At the twenty-sixth National Development Council meeting on 19 April 1969, while discussing the Fourth Five-Year Plan, Tamil Nadu Chief Minister M. Karunanidhi regretted that 'three Five-Year Plans had not been able to provide food, clothing or even drinking water to the people and the Fourth Five-Year Plan did not give out much hope of improvement in the living standards of people'. Scathing in his criticism, Karunanidhi added, 'The reason for this state of affairs was that our plans lacked boldness; these were merely an arithmetical exercise in financial resources.' [35](#)

Other chief ministers also raised the issue of provision of water. Rajasthan Chief Minister Mohanlal Sukhadia advocated additional deficit financing, which 'should be used for three priority programmes, viz. (1) minor irrigation, (2) rural electrification and (3) drinking water supply'. Uttar Pradesh Chief Minister C.B. Gupta said twenty-two of the most backward districts in the country were in UP and the state was facing both droughts and floods and 'acute shortage of drinking water in about 35,000 villages'. V.K. Malhotra,

chief executive councillor for Delhi, said, ‘The Fourth Five-Year Plan did not make any commitment for achieving objectives,’ particularly for critical areas such as primary education, health centres and provision of drinking water. Deputy Prime Minister Morarji Desai agreed that the provision of drinking water was a very vital matter and ‘hoped that the chief ministers would agree to adjust some other priorities and give this problem top priority’. ³⁶

At the crux of this issue was, and continues to be, the approach to the management, or its lack thereof, of the water economy. At the inception of the planning era, irrigation – the second biggest spender – was a separate department, but water supply was not. The First Five-Year Plan identified safe water as a determinant of good health and listed ‘provision of water supply and sanitation’ as the top priority in the health section.

The structure of water management was based on the Government of India Act, 1935, which placed the onus of water and sanitation on provincial and local governments. This template carried over into independent India. On paper the system looked seamless, but in practice it was a leaking sieve of discontents. The adequacy of the fund allocation was a bone of contention between the states and the national government. There was also the divorce of authority and accountability – the Centre decided the design of the programme and the states implemented it. The states didn’t have a say in such a one-size-must-perforce-fit-all policy regime and the Centre couldn’t do anything if the states did not deliver. At the crux of this structural confusion was the less-than-adequate allocation for the humongous task.

The right to ‘pollution-free water’ and the right of access to ‘safe drinking water’ have been read as part of ‘Right to Life’ under Article 21 of the Constitution of India. In two decades – through three Five-Year Plans and the annual plans between 1966 and 1969 – the total allocation for drinking water supply was barely Rs 297.87 crore. Unsurprisingly, between 1961 and 1970, only 6,000 more villages could be added to the number of villages that were provided drinking water.

In 1949, the Environmental and Hygiene Committee had recommended that 90 per cent of villages be provided with drinking

water. In 1971, barely 17,000 or 3 per cent of India's villages were getting drinking water. ³⁸ The raft of criticism faced by state governments triggered a four-fold increase in plan allocation from Rs 110.17 crore in the third plan to Rs 458.7 crore in the fourth. ³⁹

The agenda paper on the fifth plan, presented at the twenty-eighth National Development Council (NDC) meeting on 30 May 1972, took up the issue to provide perspective. It said, 'Even if we succeed in producing vast employment opportunities for the poor, they will not be able, with their level of earnings, to buy for themselves all the essential goods and services which constitute quality of life.' ⁴⁰ Ergo the government will have to prepare 'a national plan for the provision of social consumption in the form of education, health, nutrition, drinking water supply, housing, communications and electricity up to a minimum standard'. ⁴¹

It was clear that the allocations made till then were wholly inadequate. The NDC was informed that 'currently the states spend about Rs 40 crore annually, on rural water supply. This provision has been increased by Rs 20 crore in 1972–73. In order to meet this basic minimum need by the end of the fifth plan, it may be necessary to step up expenditure to an average of Rs 100 crore to 120 crore per annum.' ⁴² The allocation for the fifth plan (1974–79) was ramped to Rs 1091.6 crore – that is, more money was provided for five years than was spent between 1950 and 1974.

Meanwhile, public pressure on political parties to provide water to households resulted in a national programme called Accelerated Rural Water Supply Programme (ARWSP) in 1973. A centrally sponsored scheme, ARWSP was designed to supplement the efforts of struggling state governments to provide safe drinking water. The journey of ARWSP, in its many avatars, symbolizes the 'announcement approach' of successive regimes. During the Emergency, the programme was inducted into the twenty-point Minimum Needs Programme that promised full coverage of the population with safe drinking water. In 1986, then Prime Minister Rajiv Gandhi declared the programme would be on 'mission mode' and launched the Technology Mission on Drinking Water. During 1991–92, after Rajiv Gandhi's assassination, the P.V. Narasimha

Rao regime renamed it as the Rajiv Gandhi National Drinking Water Mission. In 1999, it was recast as the Department of Drinking Water Supply under the Ministry of Rural Development. In 2010, it morphed into the Department of Drinking Water and Sanitation. In 2011, Drinking Water and Sanitation was conferred the status of a ministry.

The big dams and reservoirs' mission had added 2,397 modern temples between 1950 and 1980. ⁴³ Governments at the Centre and state had cumulatively spent over Rs 2,242 crore over that period. ⁴⁴ That, however, did not translate into greater access for the people. In 1981, barely 38 per cent of the population and only 26.5 per cent of rural Indians, or one in four persons, had access to safe drinking water, as against the promised target and professed goal of 90 per cent coverage in forty years. ⁴⁵ And coverage was not all piped – it included hand pumps, tube wells and even free-flowing water from canals. In 1989, barely 16 per cent of rural Indians had access to tap water. ⁴⁶

Promises were made at home and abroad. In March 1977, member nations met at the United Nations Water Conference at Mar del Plata, Argentina. The 105 countries resolved, 'All peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs' and that 'similar considerations apply' towards provision of 'public sanitation systems'. India was one of the signatories to this resolution and pledged its full support to the designation of 1981–90 as the International Drinking Water Supply and Sanitation Decade.

Pledges require action. While water continued to be a state subject, chief ministers like V.P. Naik and Biju Patnaik recognized the need for a national water grid and campaigned for it. As a first step, in March 1983, Indira Gandhi set up the National Water Resources Council (NWRC) with the prime minister as its chairperson and cabinet ministers and state ministers as its members. The move found approval from chief ministers at the thirty-sixth National Development Council meeting. Haryana Chief Minister Bhajan Lal suggested, 'All chief ministers should be its

members.’ The creation of the NWRC paved the way for a separate Ministry for Water Resources.

It bears mention here that for a country where millions didn’t have access to safe drinking water, where thousands of children died of water-borne diseases and which was wracked repeatedly by drought, India did not have a water ministry for nearly four decades. The critical subject of water was chaperoned by one ministry or the other through the colonial and post-Independence era. Water was moved from one departmental vessel to another. In 1855, it was one of the subjects under the Public Works Department (PWD). In 1923, the PWD was merged with industry and called the Department of Industry and Labour, within which was the irrigation and power section. In 1937, following reorganization, the government created a new omnibus entity called the Ministry of Works, Mines and Power, and irrigation and water were hosted within it. In 1951, irrigation and power were moved into the Ministry of Natural Resources and Scientific Research. In 1952, irrigation and power acquired their own ministerial status. In 1974, post the launch of the green revolution, irrigation was divorced from power and wedded with agriculture to create the Ministry of Agriculture and Irrigation. Around 1980, irrigation demerged and merged with energy to create the Ministry of Energy and Irrigation. In January 1985, the Ministry of Irrigation was once again made the Ministry of Irrigation and Power. Water found a political identity and recognition in September 1985 when the Ministry of Water Resources was constituted ‘for the development of the country’s water resources in a coordinated manner’.

The creation of the NWRC and the ministry brought form and funding to the sector. Between 1980 and 1990 – the Sixth and Seventh Five-Year Plan periods – the government allocated over Rs 11,090 crore towards the provision of drinking water in rural and urban India. Between 1950 and 1980, India had allocated Rs 2,242 crore, which in effect was five times what was spent in the first three decades.

Alas, money alone doesn’t move water to homes. There were promises but no national policy. On 9 September 1987, under the leadership of Rajiv Gandhi, who was then both the water resources

minister and prime minister, India adopted its first National Water Policy. The NWP of 1987, anchored by then Water Resources Secretary Ramaswamy Iyer, was structured to know, plan and deliver. Its focus was on creating data about the availability of water, assessing and presenting projections for the future, prioritizing drinking water, developing irrigation, promoting storage for generation of power and for industry, curbing groundwater exploitation, monitoring and addressing water quality and promoting the involvement of people in the management of water.

[47](#)

Exactly fifty years after the 1948 recommendations of the Environmental Hygiene, over 83 per cent were still dependent on local wells and tube wells, some of which were bored for irrigation purposes. As for urban India, over 27 per cent did not have access to tap water and 15 per cent depended on hand pumps. A decade later, the fifty-fourth National Sample Survey (NSS) showed that 50 per cent were dependent on tube wells/hand pumps and 25 per cent on wells. In fact, the NSS said, ‘It is clear that the overall pattern in terms of importance of different principal sources remained unchanged over the last decade.’ [50](#)

It wasn’t for lack of funding – plan allocation doubled from Rs 7,093 crore in the seventh plan to Rs 16,982 crore in the eighth. Between 1985 and 1997, over Rs 28,161 crore was spent on the provision of drinking water. [51](#) At a structural level, India’s Parliament passed the seventy-third and seventy-fourth amendments to the Constitution, enabling local bodies in rural and urban India to take up the delivery of basic services, including water and sanitation, to the people. In December 1990, India, along with other member nations of the United Nations, signed the Delhi Declaration, which laid out the guiding principles of policy, including ‘protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid waste’. [52](#) At the administrative level, programmes were focused on coverage and targets set. There was funding, there was the intent. But implementation scarcely matched intent.

The programmes and their outcomes were mired in fuzzy terminology – fully covered villages, partially covered villages and problem villages. The targets kept changing. Even a single drought worsened the availability of water. Rising population, man-made factors and the fuzzy definitions skewed implementation further.

* * *

In the sixties and seventies, travelling between towns and cities across India involved carrying the *kunjaa* or clay pot with a spout. Cumbersome though it was, it stored home-filled water and comforted travelling families who laboriously refilled the *kunjaa* at select bus or railway station platforms with water, if available, from rusty public taps.

At the bus and train stations, there was always this sound – a clinking, the sound of a spoon or a metal bar being run lazily across rows of glass bottles. This omnipresent sound was the signature tune of vendors to lure clientele, played on an especially lined-up display of soda bottles known popularly as *goli-soda*. The bottles, neither capped nor sealed, had their fizz held in place by a marble snug inside the bottle's neck. Passengers would either guzzle the fizz or pay more for a dash of lime and salt to make it an event.

Ramesh Chauhan found this intriguing. As a young entrepreneur in the early sixties who travelled a great deal, Chauhan knew that sparkling water was common in the West. But why, he then wondered, would cost-conscious Indians want to pay for tasteless liquid with a few bubbles out of what were arguably unwashed or at best poorly washed bottles?

Around the time he was mulling this over, Italian businessman Cesari Rossi was thinking about introducing bottled water in India. He was convinced it would do well. As his India partner, Rossi chose Khushroo Suntook, an accomplished tennis player and authority of western classical music who founded India's first symphony orchestra. Suntook's mother was the granddaughter of the legendary Sir Jamsetji Jeejeebhoy. His father, Nariman Suntook, was a distinguished solicitor and a custodian of what was then

termed (and continues to be called) ‘enemy properties’ after the war. [54](#)

The Suntook family and their acquaintances found it incredulous that just plain water could be bottled and sold for a profit. Rossi nevertheless convinced Suntook Sr to allow Suntook Jr, then in his twenties, to set up the business under the brand name of Bisleri. For three years, Bisleri delivered bottled water to various clubs, hotels, events and Irani restaurants. But in 1967, there were business complications and Suntook Jr offered it on sale to his tennis partner, Ramesh Chauhan. In 1969, Chauhan’s Parle bought the Bisleri brand from Italian entrepreneur Signor Felice Bisleri. [55](#)

Chauhan by then had launched soft drinks like Thums Up, Limca and Gold Spot. He didn’t quite see a market for bottled water. Besides, most soft drink companies selling their sweet carbonated water also had a soda brand. Ever the entrepreneur, though, Chauhan decided to experiment with two variants of a soda under the brand name Bisleri – carbonated and non-carbonated ‘mineral water’. He thought, ‘Well, it will at least keep the Bisleri brand alive.’ It was initially advertised as a healthy alternative with the tag line ‘Bisleri Is Veri Veri Extraordinary’, playing with the words and spelling to sound Italian, or at any rate foreign. [56](#)

Bisleri caught on slowly, first with the well-travelled cognoscenti. The big push came with the arrival of bottles made of polyethylene terephthalate (PET) in the early eighties. The transparent bottles in themselves promoted the idea of clear, and therefore safe, water. Along came Coca-Cola and Chauhan discontinued Bisleri soda after selling his soft drink brands to them. But he continued building the Bisleri brand. By the late nineties, Bisleri was a familiar name for the health-conscious, well-heeled, non-resident visiting Indians and tourists.

‘The bottling of water,’ says Chauhan, ‘comes with its own challenges and need for safe practices.’ He is particularly proud of the six stages of the filtering process – chlorination, arkal, carbon, reverse osmosis, addition of minerals, micron filtration and ozonation – that every ounce of water must undergo before being bottled. When it occurred to him that PET bottles could be specially made, this entrepreneur experimented with drinking water bottle

sizes. In 1991, Chauhan launched the 20 litre bottle, by 1995 he was selling 500 ml for Rs 5 and delivering access and affordability to new groups on the income quintiles. Bisleri emerged as the generic moniker for packaged drinking water. New variants included sizes of 250 ml, 1.2, 1.5, 2, 5 and 20 litres. Packaged drinking water as a segment was growing at over 40 per cent in India and Bisleri had nearly half the market share.

By 2010, there were nearly a dozen other pan-India players in the bottled water segment – Aquafina, Himalayan, Kinley, Bailey, et al. By 2017, branded packaged water sales had grown exponentially by over 17.9 per cent from 5.3 billion litres (5,299.7 million litres) to over 13.3 billion litres and over 18.7 per cent in value terms from Rs 22,260 crore to Rs 52,430 crore. ⁵⁷ And this is just the branded story. Factor in the hundreds of semi- or non-branded players in this highly-fragmented-by-price and geography-of-reach market which is estimated to grow by nearly 20 per cent in both volume and value terms.

Parched throats propel growth. Such is thirst.

Sometime in the mid-seventies, not too far from Bombay (now Mumbai), where Bisleri was establishing itself as a generic for packaged drinking water, another generic to Indian water was beginning to take shape in the industrial hub of Kalol in Gujarat.

Dinesh Chandra Bhikhabhai Patel, who was running a successful textile enterprise called Bharat Vijay Mills, thought of looking at new opportunities. He spoke with a close associate, S.B. Dangayach, who said, ‘Let’s look at new sectors we can expand into and grow, and keep growing the enterprise.’

One opportunity emerging on the horizon was storage tanks. In the seventies, galvanized tanks were used to store industrial chemicals and materials, but the scale, they felt, was limiting. Storage tanks also had issues of supply and the cost of steel. The construction industry was also looking to new materials other than galvanized steel. In 1978, the National Buildings Organization actively began engaging industry in the search for new materials for storage tanks.

This was the time when urbanization was taking off in India through amoebic expansion of old cities as well as around industrial

clusters. At the dawn of Independence, barely 17 per cent of India was urban. By 1971, it had inched up, and of the 548 million people, 109 million lived in areas classified as urban. By 1981, roughly a quarter of the population – 159 million of 683 million – were urban dwellers. [58](#)

In India, the sequence of urbanization is inverted – to a large extent even today – in emerging urban agglomerations. This means people move in first and infrastructure and facilities may or may not follow. A builder puts up a block of flats, people buy them, move in, start living with minimal electricity, no cemented roads leading to their buildings or sewer pipes connected to mains; paved alleys follow whenever they do. Water is needed immediately when people move in; if not for twenty-four hours, at least for a few hours in the morning and evening. The storage of water becomes critical – households use whatever comes handy, besides corrugated drums, galvanized tanks, and stainless steel and brass vessels.

Patel knew storage tanks could be moulded for liquids using plastic and polyethylene. But he was looking for scale, beyond what could be achieved in the industrial segment. He thought, ‘Why not make tanks to store water?’ Why not tanks to store water in individual homes and on buildings in urban and peri-urban India – tanks which could afford a lid to prevent dirt accumulation and could be easily cleaned? Dangayach concurred, ‘Let’s focus our left-brain. Let’s just focus on practical solutions for everyday use which will not involve, nor need, too much maintenance.’

The Sintex tank was born. The black plastic polyethylene tanks found quick adoption in homes, atop buildings, housing colonies and in public-storage facilities. By the eighties, Patel’s units were making storage tanks in the range of 100 litres to over 10,000 litres and began offering colours other than black and designs other than standard-mould. From the late eighties, to match the façade of houses and buildings, the tanks were offered in grey and even white besides black. Soon enough, the tanks were ubiquitous markers dotting urbania, emerging as the generic term for water storage tanks.

Interestingly, it was only in the 1990s that Bharat Vijay Mills actually began branding the tanks as Sintex. Why Sintex? Why not

Bharat Tanks? Dangayach laughs and says, ‘Technology led the way and chose the name. The name Sintex owes its origins to the process of sintering that was followed in making the products. Initially, Bharat Vijay Mills created a plastics division under the name of Sinter Plast Containers. With the rising popularity of Sintex, the company changed its name to Sintex Industries – not just water tanks but water storage solutions.’

While private India found storage solutions, the primary public issue was yet to be resolved and getting worse. The issue of supply and source for water continued to be stranded, between promise and performance, between the many fault lines of policy and implementation.

* * *

By the 1990s, the promised dream of bringing water into homes using stored surface water from dams and lakes was turning into a nightmare. The chant in all policy discourse was, ‘Use groundwater in conjunction with surface water.’

But surface water projects were either stalled or delayed. The inadequacies ranged from design to funding. This led to the creation of yet another programme, the Accelerated Irrigation Benefits Programme (AIBP), in 1996. It was essentially a gap-funding bridge designed to support the projects in the states. The flaws of planning and design were left unattended. Unsurprisingly, the results of AIBP were scarcely enthralling. Between October 1996 and March 2008, only 40 per cent of projects funded were completed. A Comptroller and Auditor General (CAG) audit of ninety-nine of the 172 projects in nineteen states for the years 1996 to 2003 found ‘no potential was created in fifty-seven projects (of the ninety-nine examined) in sixteen states even after seven years’ and those that were set up delivered less than 50 per cent of envisaged potential. [59](#)

The need for an alternative source galvanized the government into chanting the mantra of groundwater.

There is a peculiar synonym effect in policy – discretion translates into arbitrary and ad hoc into amoebic. The landscape became a free-for-all for extraction and exploitation. It was only in

1997, after the Supreme Court ordained it (M.C. Mehta vs Union of India 1997 [11] SCC 312), that the government instituted the Central Ground Water Authority. The existence of regulations did not guarantee implementation and the rules had many crevices. The law allowed the owner of the land to use/exploit resources in the land under his possession. Aquifers knew no boundaries while land owners could draw at will to use and sell regardless of impact on groundwater level or even deterioration in the quality of water.

Irrigation is the biggest consumer of water in India and the delays and detention of irrigation projects led to over-exploitation of groundwater. In 1951, 32 per cent of groundwater was used for irrigation. By 2007, groundwater contributed over 60 per cent of irrigation. In 2017, irrigation accounted for 89 per cent of groundwater use. ⁶⁰ And by 2018, thanks to the inadequate attention to surface water programmes, almost 98 per cent of drinking water programmes, including piped water schemes, were based on groundwater resources. ⁶¹

The failures of public policy are at the intersection of need and entrepreneurship. Those who can find solutions – where they find them and when they can pay for them – have already migrated to these private solutions. Veena Srinivasan of Stanford University says, ‘Consumers only depend on informal water markets if both piped public supply and self-supply through private wells fail.’ ⁶²

Surreal it may sound but even local government bodies in towns and cities have been dependent on water tankers. As early as 1989, cities like Hyderabad had budgets for purchasing tanker water, paying between Rs 31 and Rs 62 per cubic metre – that is over sixty times the 0.55 paise it cost them from their own wells. In neighbouring Tamil Nadu, a private water collection and distribution system hosed up the water from farmers in villages to sell to urban bodies, especially in Chennai, Pudukkottai and Tirupattur.

In Maharashtra, in the nineties, the opposition parties coined the slogan of ‘tanker mukt’ to make Maharashtra tanker-free by 2000. The intent and success of schemes like Maharashtra Jeevan Pradhikaran faced the daunting challenge of adequate supplies. Undaunted, in June 2018, the government of Maharashtra declared

Maharashtra as ‘tanker mukt’ through a tweet, crediting the success to the new scheme, Jalyukt Shivar Yojana, designed to revive waterbodies and raise the water table. No matter that in just those summer months before the ‘tanker-free’ tweet, tankers had been very busy plying across the state. And then, a mere six months after the tweet, in January 2019, tankers were supplying water to drought-hit areas of the state – 1,786 tankers in all, including 1,633 private ones, in Marathawada, Nashik, Pune, Ahmednagar, Beed and Aurangabad.

The musical horns used by water tankers, banned though they may be, are a regular feature as private tankers race through residential areas during India’s morning hours – a daily reminder of the realities of water shortage and the rent politics that go with it. In Gurgaon, residents of South City Enclave allege that the water shortage that forces societies to buy water at Rs 1,800 per tanker is artificial and riding on rent to politicians.

It scarcely matters or impacts the business model of the tanker mafia that every few weeks there is an exposé of the nexus between politicians and tanker water suppliers. The tanker mafia, as it is dubbed, rolls on, be it in rural or urban India. A search for ‘tanker-water suppliers in India’ on the internet delivers over 4.6 million results in nano-seconds. Directories and e-commerce sites even offer specialized listings of tanker-water suppliers for Maharashtra or for specific locations across sixty towns next to each other. A search for ‘RO water tankers’ (water filtered with reverse osmosis process) throws up 26 lakh results – options range from stainless steel tank carriers to jars of water. There are specialists who cater to conferences, marriages, funerals and public events.

The question is often asked: ‘If there is no water, where are these water suppliers getting so much of it from?’ The second question, often asked, answers the first: ‘Why is no one doing anything about these tanker lobbies and water mafia?’ Then, its own answer, invariably with a sigh and what has become that typical Indian resigned shake of the head: ‘These politicians.’

The very convenient Indian matrix which divorces authority from accountability has allowed politicians and babudom to escape blame. The over-extraction of groundwater has resulted in the fall of

water tables to such depths that groundwater is now being mined. The failure of politicians – intentionally and inadvertently – to institute and execute policy in favour of the public has led to private profit turning groundwater into a mining industry.

The marriage of public failure and private profit has turned groundwater extraction into a mining industry. The consequence is visible in these forbidding statistics. In August 2018, the Standing Committee on Water Resources was informed that the annual replenishable groundwater resource was 447 bcm, of which 253 bcm was being utilized – 228 bcm for irrigation and 25 bcm for drinking, domestic and industrial use. Identifying the regions where there was over-exploitation of groundwater as ‘dark zones’, the report revealed that of the 6,584 blocks, ‘1034 are over-exploited, 253 are critical and 681 are semi-critical’.

The fundamental reason for rapid depletion of the water table is the rising dependence on groundwater. The rise in use of groundwater for multiple purposes comes along with distortive policies like free power, which worsens the balance. Typically, governments concerned themselves with surface water. Poor implementation of projects resulted in over-use of groundwater, with little or no attention to long-term development. And even as groundwater is over-exploited, surface water management languishes for want of attention. American hydrologist Raymond Nace coined a phrase for this: hydroschizophrenia. The failure to recognize the integrity of the hydrologic cycle – very simply, over-exploitation of one can potentially jeopardize the other. [63](#)

The picture of over-exploitation is captured by the American National Aeronautics and Space Administration’s (NASA) ‘Gravity Recovery and Climate Experience’ satellites that monitored groundwater levels. [64](#) The research found that between 2002 and 2008, more than 109 cubic km of groundwater in India disappeared. The volume of water would be double the capacity of Upper Wainganga, which is India’s largest reservoir, or three times the water in Lake Mead in the US. [65](#) A follow-up report of NASA shows that between 2002 and 2014 groundwater continued to

deplete in Rajasthan, Punjab and Haryana by about 16 cubic km per year. [66](#)

A UN report titled ‘Groundwater around the World’ found that India tops the list of top ten groundwater-abstracting countries. [67](#) India extracts over 250 cubic km of water, which is more than the water China and the US extract cumulatively. How this is happening is worth our attention. The number of inventoried wells rose from 4 million to 23 million by 2013. What is even more significant is that between 2007 and 2013 the number of deep tube wells, which draw water at over 100 metres, surged from 1.46 million to 2.6 million. [68](#) The bulk of the water is used for irrigation. India uses twice the amount of water to grow crops vis-à-vis China and the US.

And then there is contamination in this groundwater. The Central Ground Water Board estimates that more than half of India’s groundwater is contaminated. In August 2018, the Ministry of Water Resources informed Parliament on the state of groundwater in the country: Fluoride beyond the permissible limit has been encountered in 335 districts of twenty states, nitrate in 386 districts of twenty-one states, arsenic in 153 districts of twenty-one states, iron in 301 districts of twenty-five states, lead in ninety-three districts of fourteen states, cadmium in twenty-four districts of nine states and chromium in thirty districts of ten states. [69](#) The habitations affected by contaminated groundwater: 72,202. Of these, 12,568 are affected by fluoride, 17,910 by arsenic, 23,819 by iron, 14,132 by salinity, 1,850 by nitrates and 2,420 by heavy metals. [70](#)

By July 2019, the number of districts with fluoride had gone up to 370 in twenty-three states, nitrate to 423 districts in twenty-three states, iron to 341 districts in twenty-seven states and arsenic was found in water in 152 districts in twenty-one states, cadmium in twenty-four districts of nine states and chromium in the groundwater of thirty districts in ten states. [71](#)

It’s only getting worse. Researchers at Duke University unveiled their findings in *Environmental Science and Technology Letters*, elaborating on the presence of uranium in groundwater from aquifers across sixteen states in India. They found that levels of uranium in seventy-five of the 226 wells tested in Rajasthan and

five of the ninety-eight wells tested in Gujarat exceed World Health Organization (WHO) provisional health guidelines. Integration of data with results from previous studies shows contamination across 'a wide distribution of areas throughout India' with groundwater containing levels of uranium exceeding 30 µg/L, far above the WHO provisional standard.

On 21 November 2019, the Government of India informed Parliament that it knows about the presence of uranium in groundwater: 'The government is aware about the prevalence of uranium concentration exceeding 30 microgram / litre (the WHO provisional guideline).' The government added that it also knows that the affected states, as per a study conducted by Duke University in association with the Central Ground Water Board and state groundwater departments, are Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal. [72](#)

Avner Vengosh, professor of earth and ocean studies at the Nicholas School of Environment, who oversaw the research by Duke University, observes, 'Millions of people are being exposed to uranium, and are at a higher risk for kidney disease.' [73](#) Contamination of groundwater has been repeatedly identified as one of the causes for a myriad range of health problems faced by Indians, particularly in rural areas. Twenty-one per cent of communicable diseases are related to unsafe water, and diarrhoea alone causes over 1,600 deaths every day. [74](#)

Meanwhile, another threat is unattended. According to the Central Pollution Control Board (CPCB), sewage from just urban areas is estimated at 61,948 mld, against which the available sewage treatment capacity is only 23,277 mld. [75](#) This means that two-thirds of the sewage is flowing untreated into the ground, lakes and rivers. Add to this the unquantified amount of waste generated across the country that finds its way into waterbodies.

The neglect of waste treatment has consequences such as the pollution of rivers. In 2015, the CPCB identified 302 polluted river stretches on 275 rivers spread across twenty-eight states and one

union territory. The identification was based on the key indicator of biochemical oxygen demand (BOD) levels. In February 2019, the CPCB had updated its report – 351 polluted river stretches on 323 rivers spread over twenty-nine states and two union territories. ⁷⁶ This was the case despite the many river clean-up programmes involving billions of rupees.

The sloth in the system is best illustrated by the saga of the clean-up of the River Ganga or Ganges. The Ganges is a cultural and spiritual entity in India. It flows for 2,500 km through five states and its basin is spread over 10.86 lakh sq km, of which 8.62 lakh sq km are in India. It is home to a wide swathe of biodiversity critical for sustainability. Over 500 million people live on its banks. It accounts for a fourth of India's fresh water needs and enables livelihoods across several sectors – agriculture, fisheries, tourism, transportation and manufacturing.

The first institutional mechanism to clean this river, the Ganga Action Plan, was set up in 1985. In 1993, it was renamed GAP II. Since then it has morphed from the National Ganga River Basin Authority to the National Mission for Clean Ganga and, from June 2014, into Namami Gange. In September 2014, speaking at New York's Madison Square Garden, Prime Minister Narendra Modi said, 'It will be a huge help for 40 per cent [sic] population of the country. So, cleaning the Ganges is also an economic agenda.' ⁷⁷

Three years after its launch, in December 2017, the CAG found Namami Gange wracked by administrative delays, poor contract management and lack of monitoring. The audit revealed the staggering sloth: Against 5,016 compliance verifications required to be conducted by the Central Pollution Control Board in respect of 988 grossly polluting industries, only 3,163 compliance verifications were conducted during 2011–17. Against the 120 mandatory adequacy assessments required to be conducted in respect of five identified Common Effluent Treatment Plants, only seventeen were carried out as of August 2017. Against the mandatory 560 inspections to be carried out for performance evaluation of sixty-seven sewage treatment plants, only 177 were carried out.

In 2015, the government had allocated Rs 20,000 crore to be spent over a five-year period. As of November 2018, only a sum of Rs 4,994.10 crore had been spent. ⁷⁸ In November 2019, Parliament was informed that as of October 2019, the government had allocated Rs 12,741.42 crore, of which Rs 8,463.72 was released and only Rs 7,493.60 crore disbursed. Of the 150 sewerage projects taken up, forty-five or only one-third were deemed complete. ⁷⁹

If this is the state of India's crowning river, can its lakes fare any better? Bengaluru in Karnataka, once famous as the Garden City of India and dotted by picturesque lakes, is now infamous for its Bellandur Lake and its seasonal photo exhibition of fire and foam caused purely by pollution. In July 2018, Parliament was informed that of the 171 major lakes being monitored by the CPCB, 124 are identified as 'non-compliant in water quality'. Of these, twenty-eight, the highest number among states, are from Karnataka. ⁸⁰

* * *

Given the level of water pollution and the many threats to health that it represents, Indians are compelled to pay for protection (or what is advertised as the *paani ka doctor*) and for filters and home filtration systems to ensure that the drink is safe. The compelling need for non-hazardous water has led to a booming market in water purifiers.

Google throws up over 3.12 million results for a search on RO systems alone. Online platforms provide focused services and vendors. For example, those looking for reverse-osmosis systems have over 16,200 different vendors and products to choose from, with systems that can deliver 100 cubic metres per hour to over 1,000 cubic metres per hour. If the need is for home/shop/business, there are 322 products to select from. Over 3,700 vendors are specialists of sorts for water to hospitals and medical care centres. Entire water filtration plants can be purchased from 1,309 different choices.

In the summer of 2018, when temperatures soared above normal for several sweltering days in Mumbai, former Director General of Maharashtra Police D. Sivanandan contacted what he calls 'like-

minded friends' on WhatsApp to crowdfund the gifting of portable water-filter bottles to policemen across the city. A personal, portable water-purifier bottle can cost around Rs 500 if branded. An online search for personal water-purifier bottles in India alone can throw up 2.7 million results.

The need is what is giving this market scale and speed. 'India Water Purifier Market Outlook 2023' by Bonafide Research finds that the water purifier market in India has 'grown at a compounded annual growth rate of 11 per cent from Rs 2,500 crore in 2011–12 to Rs 4,557 crore in 2016–17 and is expected to cross Rs 7,000 crore by 2023'. ⁸¹ Indians currently buy over 6 million water purifiers in a year. And this is just the organized sector. The unorganized sector servicing smaller towns and low-income segments has grown in parallel.

A rural marketing survey on safe water supply by the Japan International Cooperation Agency (JICA) reveals 'that as high as 50 per cent of the interviewed respondents, those earning more than Rs 5,000 per month, preferred safe drinking water and thus were willing to pay for the filtration product'. ⁸² Predictably, competition is coming in to join established players such as market leaders Eureka Forbes, Kent RO, HUL Ion Exchange and the Tatas. Over the past couple of years, players such as Blue Star, Luminous, Electrolux, Godrej, Haier, TTK Prestige, Havells, Panasonic, LG Electronics, Okaya Power, AO Smith, CIEN British Birkfield, Purolite Whirlpool and Xiaomi, among others, have entered the market both in the institutional and the household segments.

Water purifiers have now entered the NSS records. It is a health necessity for over 12 per cent of the rural and urban homes. Need and adoption is obviously higher in urban homes, with over 26 per cent or one in four homes investing in purifiers (electric or non-electric) to filter drinking water. Every second home in Uttarakhand (52.3 per cent) and Punjab (50.4 per cent) depends on electric purifiers, followed by Haryana (40 per cent) and Delhi (36.8 per cent). Dependence on electric purifiers is a punt, really, for there is no assurance of sustained power supply. In many of the states like Tripura (77 per cent), Mizoram (62 per cent) and Assam (47 per cent), residents have chosen non-electric water purifiers. ⁸³

The poor quality of water and the potential health hazards have had another interesting consequence. Across India, over eighteen million homes or over eighty-two million people – roughly the population of Germany – are compelled to use bottled water as their primary source for drinking water. One in four persons or over 25 per cent of urban homes in Karnataka, Telangana and Puducherry depend on bottled water as the principal source for drinking water. And it is not just the urban cognoscenti who reach out for the PET bottle. Indeed, in Andhra Pradesh, a higher percentage of rural homes (30.5 per cent) than urban homes (28.6 per cent) use bottled water as their principal source for drinking water.

Adoption of private solutions is now at both individual and institutional levels, at the top of the income pyramid, in the middle and even in the lower quintiles. Water purifiers have also been installed as a community facility, and there are reverse osmosis filtration mini-plants for the purpose. Customized solutions for funding and operating different kinds of mini-filtration plants are also being crafted for different geographies.

One such example is the Total Water Mission, an umbrella initiative started in July 2014 by the Tata Trusts to ‘create a healthy future for millions of Indians through provision of safe, assured and adequate drinking water’. The mission undertakes direct interventions and also works on joint projects with individuals and institutions – the Jaldhara Foundation set up by American philanthropist Jacqueline Lundquist, Bill and Melinda Gates Foundation, Arghyam, One Drop Foundation, Hans Foundation, H.T. Parekh Foundation and the Paani Foundation of Bollywood actor Aamir Khan, among others.

The mission works at multiple levels – with policy-makers, institutions, communities and households. At the community level, the mission brings into play different technologies like Pureit and Drinkwell as low-cost, low-energy-intensive solutions. At the household level, one of the solutions is the low-cost, nano-silver-based Tata Swach filter, developed by Tata Chemicals for home users. The mission works across India with many templates and solutions to address multiple kinds of contaminations in different regions. Through its interventions, the Total Water Mission claims

that it provides safe drinking water and water-resource-management solutions across 4,000 villages, covering more than 3 million people in twelve states.

Another example is Piramal Sarvajal, a community-level drinking-water solutions initiative of the Piramal Foundation. It began with providing RO water at a village in Rajasthan as an experiment to use technology for delivering services. Since 2008, the foundation has used every lesson on the learning curve to build a combination of models – partnership with community, a philanthropic programme, a lease-enterprise franchisee, social enterprise, etc. Those partnering with the foundation include corporates like HDFC, Honda, RPG Group, Temasek, Adani, Fullerton India, NTPC, Lupin, Nestle, Asian Paints, Standard Chartered Bank, Mercedes Benz, Shriram Group, KEC, Cairn, as also organizations such as Apollo Foundation, Pratham, Ujjivan, Enable Health Society, etc. The foundation also invites social enterprises or individuals to participate via the franchisee model. In 2019, the foundation claimed to be providing water to half a million people every day, through over a thousand ‘touch points’ spread across sixteen states in India.

There are also hybrid models, encompassing profit and philanthropy, at play in the water economy. In 2013, brothers Parag and Anurag Agarwal set up JanaJal, with \$5 million in funding from Tricolor Cleantech Capital, to deliver safe drinking water through water ATMs. The brothers have set up over 600 water ATMs in different parts of the country – in cities, small towns, at police stations and railway terminals. The ATMs operate on a self-sustaining basis where users pay Rs 5 per litre or can get water for free if sponsored by the corporate social responsibility (CSR) initiatives of companies.

At its very core is the sourcing of water. ‘It isn’t easy to source water for JanaJal,’ explains Parag Agarwal, Founder-CMD. ‘Every site presents its own challenges. We use municipal water, groundwater, surface water and even a combination depending on availability.’ He adds, ‘The ATMs mostly use reverse osmosis to filter water and nano filtration at places where quality is affected by arsenic or iron.’ The Agarwals get their ATMs custom-built for the

location – a water ATM can cost anything between Rs 3 lakh and Rs 15 lakh. As of October 2019, half the ATMs are dispensing water for a price and the rest are backed by philanthropy. ⁸⁴

Government entities have also begun using water ATMs. In Mumbai's suburban section, for instance, the Indian Railway Catering and Tourism Corporation (IRCTC) has leased water ATMs retailing water in different volumes at different price points, with and without containers – from Rs 1 for 300 ml (for those who have their own containers) to Rs 2 for a cup to Rs 20 for 5 litres (for those who bring their own refillables). The first water ATM was installed in 2016 at Mumbai's suburban local railway station at Khar, between platform numbers three and four. Jyoti Pawar, who is managing this water ATM, says, 'It's a boon for everyone. From commuters to casual labourers, they all come for clean water.' In the summer of 2019, IRCTC was running over 3,000 water ATMs at railway stations, many of them set up and operated by JanaJal.

Leveraging social conscience for public failures is a tried-and-tested instrument in the flyover politics of India's elected. Ergo, wooing voters has facilitated the percolation of water ATMs across the hinterlands. In Karnataka, the Rural Development and Panchayat Raj Department runs around 13,700 water ATMs, while the remaining are handled using the local area funds of elected representatives. ⁸⁵ Politicians in other states like Telangana, West Bengal, Delhi, Rajasthan, Maharashtra, Haryana, Gujarat and Chhattisgarh too have set up water ATMs.

The private models of delivery of safe water through purification systems is now, ironically, being propelled as a public policy solution by the politicians in states through water ATMs. 'Smart cities' are looking at public-private partnerships. The city of Dehradun, one of the cities under the Government of India's Smart City programme, had in December 2018 proposed the 'setting up of water-ATM for safe drinking water, including the designing, financing, constructing/installing, operating and maintaining of water-ATMs and vending water at public places through public-private partnerships'. ⁸⁶ Cities like Ujjain, Guwahati and Baroda are following suit.

At another level, enterprises are inviting entrepreneurs to set up franchisees. Under a branded template called Aqua Guard Station, Eureka Forbes offers a business opportunity, training, know-how and equipment. ⁸⁷ Across rural and peri-urban areas, companies are advertising in local languages and regional media to enter into franchisee agreements to set up water ATMs and earn over Rs 50,000 per month. ⁸⁸

Clean water is also being leveraged to, well, just be liked by voters. Meet Bhaskar Pere-Patil, a school dropout of Patoda village near Maharashtra's Aurangabad. Pere-Patil, infamous for using money and muscle in elections, underwent a personal transformation when in 2007 he realized that the villagers feared him but did not respect him. He decided to try and earn respect by addressing the issue of water scarcity. The fear factor helped initially in getting the villagers to preserve rainwater, create bunds and raise the water table. Pere-Patil then looked at drinking water. He persuaded the panchayat and villagers to pool resources and set up a water filtration plant in the village. The panchayat crafted the policy on who should get how much water. The plant was fitted with a meter and villagers were handed out 'ATM cards'. The 580-odd families in the village can now draw 20 litres of filtered drinking water every day using their water ATM cards. ⁸⁹

In Punjab, in a pilot project in Hoshiarpur, the Lambra Kangri Multipurpose Cooperative Service Society is using rice husk to purify water. ⁹⁰ The self-help group uses different methods to treat water, including rice-husk-ash cast in a combination with cement and pebbles to create a filtration bed that traps over 95 per cent of turbidity and bacteria in the water. The use of iron hydroxide enables filtration of arsenic from water, injection of aluminium hydroxide helps removal of fluoride from water and the use of silver nanoparticles with rice husk provides safe drinking water. These innovations are now commercialized as low-cost household water purifiers.

Innovator Subhash L. Devi has enabled mobility for water ATMs. The start-up, incubated in Pune's Science and Technology Park, has designed APE Jaldoot as a solution for delivering drinking water to

arid and water-scarce regions. Essentially, APE Jaldoot is an ultra filtration (UF) system mounted on a three-wheeler auto rickshaw that has a shaft to drive and run a multi-stage pump, which can suck the water from a water source, treat it, test it and deliver drinking water. Several young entrepreneurs, including women, are expressing their interest to drive and operate the system. It's very simple to operate and the rickshaw driver is trained to operate the unit, including testing of water at the point of filtration, before and after. The innovator has since been working on installing GPS systems to enable quality monitoring.

Adam Smith, in his seminal tome *The Wealth of Nations*, says, 'Man is rich or poor according to the degree in which he can afford to enjoy the necessities, conveniences and amusements of human life.' Water is a necessity. Unable to wait any more for their politicians to ensure public delivery, people are rich and poor as they turn to private pay-per-drop solutions.



The road to perdition is paved with lofty intentions. When it comes to water, there has been a remarkable consistency of failure across decades.

At the dawn of Independence, the government promised to deliver water to 90 per cent of the population in forty years.

India's first National Water Policy, in 1987, stated, 'Adequate drinking water facilities should be provided to the entire population both in urban and in rural areas by 1991', and drinking water for humans and animals 'should be the first charge on any available water'.

At the release of the 2002 policy update, Prime Minister Atal Bihari Vajpayee expressed anguish about the millions deprived of 'access to drinking water' and defined 'water security as an overriding national objective'.

A decade later, on 15 August 2004, Prime Minister Manmohan Singh declared, 'Dealing with the problem of water is an important commitment we have made as part of our "New Deal for Rural India".' On 28 December 2012, releasing another update on the

water policy, Singh said, ‘The policy is an effort to focus on the human cause in the water sector and would lay a roadmap for the future based on the fundamental principles of equity, sustainability and good governance.’

In 2014, the BJP promised to ‘transform the quality of life’, to make ‘potable water available to all’, to introduce ‘low-water-consuming irrigation techniques’ and make water ‘reach all homes, farms and factories’. [91](#)

In 2019, the BJP in its election manifesto, called Sankalp Patra, declared, ‘Water is a critical resource but its management is spread across various departments, even at the central level. We will form a new Ministry of Water unifying the water management functions to approach the issue of water management holistically and ensure better coordination of efforts.’ It also promised, ‘We will launch “Jal Jivan Mission” under which we will introduce a special programme, “Nal Se Jal”, to ensure piped water connection to every household by 2024.’ On 31 May 2019, the government rechristened the Water Resources Ministry as the Ministry of Jal Shakti for delivering on its promises. Nal Se Jal (water from the tap), as slogans go, is the defining irony of the tragedy of India’s lack of water.

It remains to be seen what comes off such noble intentions; to actually have water – clean and available – coming out of a tap in every house would be a laudable feat. This calls for shedding the tendency to plan for the future through historical precedents, upending centralization and source bottom-up solutions which involve communities, decentralize form, function and funding and devise an accountability matrix.

All of this is known – there is no shortage of literature on what and how. The fact is that policy change in India comes mostly in the wake of distress calls. It is more than evident from the data that the crisis is here. The political class, though, is yet to respond to the distress calls – probably as the silent crisis has not translated into electoral consequences.

Between 1950 and 1989, India witnessed ten years or episodes of extreme drought. Since 2000, the frequency has gone up as India has faced five droughts in 2002, 2004, 2009, 2014 and 2015. Each episode of SOS compelled change. For instance, the induction of

technology and the green revolution followed the 1965 drought, the 1972 drought led to the ramping-up of funding for mega projects, the 1982 drought led to the creation of the NWRC, the one in 1987 triggered the first National Water Policy, the 2002 drought propelled a review and a new NWP.

Every day in 2002, four trains, the lifeline for twelve towns, fetched six million litres of water for Rajasthan. Villagers of Limdi in Surendranagar, Gujarat, were failing to find water even at depths of 1,200 feet. The Usman Sagar lake in Hyderabad dried up and thirty-four of 116 municipalities got water for one hour twice a week. In the national capital, the Delhi Jal Board was dependent on 1,250 tube wells to supply drinking water, while Chennai was sourcing water from the wells of 250 farmers on the outskirts of the city, as over 100 million people in twenty cities were thirsting for water. Across India, sixty-six million people in 200 districts risked arsenic poisoning from groundwater and water mining. Extraction was common in the states of Punjab and Haryana, while thirty million people in Maharashtra were dependent on tanker water.

And yet, every new water policy arrives only as a cocktail of previous promises and crisis responses. The 2002 NWP urged collaboration with the private sector to drive innovation. Besides outlining the must dos – storage, conservation, pollution and a robust data management system to deliver actionable information – the NWP 2002 also laid emphasis on the need for defining water as an economic good to enable the optimal, economical and equitable use of the scarce resource.

Every decade, a new set of data has set off the alarm bell. In 2010, when the Planning Commission reviewed the progress of its promises, it discovered that over 83 million people, the population of Iran, depended on unprotected sources for drinking water. Over 183 million people, three times the population of France, received less than 40 litres per capita per day (LPCD). The commission admitted that the ‘problem was even more serious than originally assessed and solutions are almost certainly more difficult’. The self-appraisal quite boldly stated, ‘We cannot expect to find a solution unless we can come out of the silos into which we have divided water and take a holistic view of the hydrologic cycle.’ [92](#)

In one breathless sentence, the appraisal report exposed the multi-ministerial, multi-layered structural schism which causes multiple failures and results in water-parched Indians: ‘The responsibility for ensuring adequate availability of water for agricultural use is divided between the Ministry of Water Resources, which is responsible for major, medium and minor irrigation, the Department of Land Resources, which is responsible for watershed management, the Department of Rural Development, which is responsible for the Mahatma Gandhi Rural Employment Guarantee Act that is strongly oriented to deal with water conservation issues, and the Department of Agriculture, which deals with water-use efficiency. Similarly, rural drinking water is dealt with by the Department of Drinking Water Supply (DDWS) within the Ministry of Rural Development, but rural drinking water overwhelmingly relies on groundwater and the sustainability of this source depends crucially on interventions by other players and schemes that lie outside DDWS’s purview.’

But no government – Centre or state – is quite ready to break out of any cycles and become answerable. Meanwhile, the apathy that envelops implementation persists. Consider that in 2012, the Government of India allocated Rs 89,956 crore to expand on the assurance of safe drinking water in rural India. The deliverables were: by 2017, all rural habitations, government schools and anganwadis to have access to drinking water, 50 per cent of the rural population to be provided 55 litres per day of potable drinking water by pipes and 35 per cent of rural households to be provided household connections. ⁹³ As of 2019, only one in five Indian households have piped water in their homes. Over 78.6 per cent do not have access to piped water in their homes. Every second home depends on water from wells, tube wells, unprotected water bodies, hand pumps or tanker water. Over 42 per cent must trek between 0.5 and 1.5 km to fetch water.

Juxtapose this systemic failure against the success of countries such as Israel and Singapore. In 2000, the Middle East was impacted by a series of droughts. The Sea of Galilee was rapidly depleting and its bed risked being severely damaged. The government imposed restrictions on water usage and inducted a

comprehensive strategy defining ownership of water with the state, pricing to reflect economic cost and regulation to ensure conservation using modern monitoring methods. In 2015, one of the driest years in its history, Israel had surplus water. Thanks to the policy push, it now ‘manufactures’ 62 per cent of its water requirement through recycling and desalination and natural water accounts for just 38 per cent of its consumption. ⁹⁴ Indeed, Eli Tidhar, partner at Deloitte Israel, reveals the country produces 660 billion litres each year from desalination and 290 billion litres through recycling of water. What’s more, Israel now exports 150 billion litres of water every year. All of this was achieved by creating awareness. For instance, how saving a few percentages of water precludes the need for a \$400 million desalination plant. The foundation for this was the creation of an ecosystem for innovation.

The city state of Singapore has a population of roughly 5.6 million and a land area of 714 sq km. It receives an annual rainfall of around 2,500 mm but the catchment area is limited. Its geography precludes dependence on natural aquifers or groundwater. Given its size and location and the contentious relationship with Malaysia on water, Singapore adopted an integrated approach to improve sustenance. Singaporeans have access to safe and assured water for twenty-four hours of the day. In 2003, the Public Utilities Board (PUB) launched a large-scale water reclamation project, Toilet to Tap, to treat used water and branded it as ‘New Water’.

In fifteen years, PUB invested over \$350 million in research and development and set up 510 projects to meet four specific goals: increase water resources, reduce production cost, enhance water quality and grow the water industry. ⁹⁵ New Water currently delivers 175 million gallons per day, which is over 40 per cent of its needs, and will meet 50 per cent of its needs by 2030. Again, awareness, along with recovery of economic cost, has played a big part – the first visual on the PUB media is how 9 litres can be saved by showering a minute less, 11 litres by using a cup while brushing and 14 litres if vegetables are washed in a tub instead of a running tap. ⁹⁶

The point of illustrating the success of Israel and Singapore as well as other nations is evidence that it can be done. Every decade,

Indians have been let down by the state, its politicians and the babudom. Worse, if one aggregates the data, India should not suffer from water shortage. India has 2.45 per cent of the world's land and 4 per cent of freshwater resources.

However, the granularity of data reveals that availability is affected by geographical and time constraints. There are water-surplus areas and then there is the issue that rainfall is largely concentrated in four months of the year. Annual precipitation – that is, snowfall and rain – is 4,000 bcm. This translates into 1,869 bcm of water in rivers, of which we are able to use barely a third. So a large quantity of water flows into the sea, is wasted because the rainfall is skewed and the usage is not optimal.

The answer, experts have maintained, is in managing the flow and storage. The epics have it that Sage Bhagirath changed the course of the Ganges. Modern India's solution gurus suggested that the course of India's rivers be linked and channelled to avoid both floods and droughts. The idea, encapsulated in the blueprint, suggested linking thirty-seven rivers to transfer water from surplus areas to regions facing scarcity. ⁹⁷ These links would span across 9,600 km, connecting thirty-two dams, and would require fifty-six million tonnes of cement and two million tonnes of steel. The deliverables include 173 bcm of water or a fourth of the mighty Brahmaputra river through a 12,500 km maze of canals. This could irrigate thirty-four million hectares of land and quench the thirst in 101 districts and five metros. The mega project would, as water is moved from storage areas to canals – for instance, linking Ghagra river in Nepal to Yamuna 431 km away, or Mahanadi in Odisha across 932 km to Godavari in Andhra Pradesh – enable the generation of 34,000 MW of power. ⁹⁸

The idea of interlinking rivers was first mooted by K.L. Rao, former irrigation minister, as a canal link between the Cauvery and Ganges. Subsequently, Captain Dastur, a pilot by profession, expanded the ambit of the project to link other rivers with the Ganges and Cauvery and called it the Garland Canal. The grand idea had many takers. In 1980, the National Perspective Plan visited and reviewed the ideas and literature. In 1982, the National Water

Development Agency (NWDA) was tasked with putting the plan on paper.

For over two decades, the idea stayed within the walls of NWDA and on paper. On 14 August 2002, in his address to the nation on the eve of Independence Day, President A.P.J. Abdul Kalam observed that the need of the hour was the creation of a water mission that, inter alia, would look into the question of networking of rivers with a view to dealing with the paradoxical situation of floods in one part of the country and drought in the other.

Even as policy-makers came to grips with the suggestion, on 16 September 2002, the Supreme Court, hearing petitions on equitable distribution of water, decided to treat it as an independent public-interest petition and issued notices to the Centre and all the states to file affidavits by the end of September. ⁹⁹ Soli Sorabjee, the then attorney general of India, stated that the government had accepted the concept of interlinking of rivers and a high-powered task force would be formed. The Supreme Court vide order dated 31 October 2002 recorded the consensus.

Judicial action spurred political activism. Vajpayee broke new ground in the Lok Sabha, pledging commitment to the project and calling for a national consensus. He got an endorsement from Congress President Sonia Gandhi, which was interpreted as support from sixteen Congress-ruled states. The deluge of action pushed the project up the priority list. On 13 December 2002, a task force was set up under the chairmanship of Suresh Prabhu to expedite the interlinking of rivers and to draw up a programme for ensuring the implementation of the link project. A reasonable time frame of not more than ten years was fixed – the original 1982 draft had put the project period as forty-five years. The government estimated that the project would deliver thirty-seven million man years of employment and would cost Rs 5,60,000 crore, twice the total revenue of the government in 2002.

The usual steps followed. Action plan I was prepared with a deadline of 2016. The plan proposed that independent links be pursued for discussions first – the first links taken up for study and deliberation were in the states of Gujarat, Maharashtra and Chhattisgarh, followed by studies on the potential of linking rivers

with a presence in Karnataka, Madhya Pradesh, Uttar Pradesh and Rajasthan. The detailed project reports (DPRs) were to be completed by December 2006.

Typically, the momentum for big change ebbed soon. The task force was wound up and a special cell was constituted – the change is code in government circles for the de-ranking of any project. The issue of funds and implementation aside, the biggest hurdle was inter-state cooperation. State after state disputed the data on surplus water in river basins. Losing a share of flowing water has political consequences.

The phenomenon was not new. Policy in India has frequently been held hostage by competing political compulsions. The river-to-canal projects in Punjab and Haryana were meant to deliver water and prosperity. In 1966, soon after their formation, Punjab and Haryana fought over who would draw how much water from Ravi and Beas. A decade later, Haryana was allocated 3.5 million acre feet of water and, to enable the usage, the Sutlej–Yamuna Canal was proposed. Allocations were made for funding, land was acquired and construction started. The Akali Dal took the matter to the Supreme Court. Indira Gandhi got the three Congress-ruled states to agree to a sharing formula and the cases were withdrawn.

The Akali Dal came to power in 1985 and rejected the 1981 deal. This led to the creation of a tribunal – the Justice V. Balakrishna Eradi Water Tribunal. Following the rise in militancy in Punjab, the construction came to a halt in July 1990. In July 2002, the Supreme Court ordered the governments to complete the canal and make it operational in a year. The standard operating practice came into play – a note on SYL was prepared in view of the directions of the Supreme Court and a committee of secretaries met on 24 January 2003. A year later, in July 2004, the Punjab government enacted a law terminating its obligations. ¹⁰⁰ The matter once again was referred to the Supreme Court.

Cut to March 2016. Notwithstanding the Supreme Court directive, the Punjab assembly unanimously approved the ‘Punjab Sutlej-Yamuna Link Canal (Transfer of Proprietary Rights) Bill, 2016’ and returned 5,376 acres of land acquired for the canal to its owners. ¹⁰¹ The Haryana government, led by the BJP, was stunned

by the action of the Punjab government, led by the Akali Dal, allies of the BJP in the Centre. The Haryana government protested to Kaptan Singh Solanki, Governor of Punjab and Haryana. The Punjab government said it would not give any water and the Haryana government said it would fight for justice. In July 2018, the government of Haryana moved a petition for an early hearing. ¹⁰²

Of the eight interstate rivers, water dispute awards have been given in three – one is pending and four involving eleven states are in courts. A new law, the Inter-State River Water Disputes (Amendment) Bill, 2017, to amend the Inter-State River Water Disputes Act, 1956, is pending in Parliament, as is the proposal to amend the River Boards Act of 1956 through the River Basin Management Bill. The history of legislation around the management of water resources is littered with intent that did not get translated.

Predictably, the enthusiasm for the interlinking of rivers gave way to politics. The viability of the idea rests on the premise of availability of surplus water in some river basins. The Union government and some states expressed concern and apprehensions about the reliability of the water supply, the issue of tribunal awards and the very existence of surplus. Groups of environmentalists pitched in with objections and bean counters rang the alarm on finances.

Ten years after the 2002 order, the petition and the petitioners were back in the Supreme Court. The bench observed: ‘It is evident from the record that the reports submitted by the task force have not been acted upon.’ In its order of 27 February 2012, the apex court in a sixteen-point order asked ‘the Union of India and particularly the Ministry of Water Resources, Government of India, to forthwith constitute a committee to be called a special committee’ for the interlinking of rivers with directions on meetings and biannual reports. It also expressed a ‘pious hope of speedy implementation’.

¹⁰³ The committee came into being only on 24 July 2014 and has since been going through the motions. ¹⁰⁴

Meanwhile, every year, on average, ninety-one of the country’s districts are hit by drought, while forty million hectares of land in eighty-three districts are submerged with flood water. In 2050, India’s population is expected to touch 1,650 million. It would need

to double its food production to 450 million tonnes. The demand for water is expected to rise from 634 bcm to 1,447 bcm. The project of interlinking rivers is stranded between drafts and feasibility reports. What was once a must-be-done for the political class has been reduced to a may-be-done idea. Interlinking of rivers is now a concept that makes a cameo appearance in parliamentary debates. Election manifestos continue to promise what often seems like a miracle – it found mention in the 2019 manifesto of the BJP.

Meanwhile, the warning bells ring louder on the state of the water economy. A study by David McKenzie and Isha Ray said bluntly, ‘Water supply in most Indian cities is only available for a few hours per day, pressure is irregular, and the water is of questionable quality.’ ¹⁰⁵ It added, ‘No major Indian city has a 24-hour supply of water, with four to five hours of supply per day being the norm’, as against the nineteen hours per day supply across the Asian-Pacific region.

That was a decade back. Nothing has changed except the numbers. NITI Aayog said, ‘India is currently suffering from the worst water crisis in its history.’ ¹⁰⁶ In its review of states across nine broad sectors of water management, it found 60 per cent of the states, home to over half the 1.3 billion populace, performing poorly. Elaborating on the crisis, it presented a shocking parade of facts – 600 million people face high to extreme water stress; about two million people die every year due to inadequate access to safe water; twenty-one cities, including Delhi, Bengaluru, Chennai and Hyderabad, are expected to run out of groundwater by 2020, affecting 100 million people; 75 per cent of households do not have drinking water on premise; 84 per cent of rural households do not have piped water access; 70 per cent of our water is contaminated; India is ranked 120 among 122 countries in the water quality index.

You can’t ask for a more eloquently illustrated confession of failure.

2

HEALTH

Bypass Surgery

Delhi, April 2018. The Sushruta Trauma Centre, a Delhi government hospital. Patient Vijendra is admitted with a head injury. The surgeon, instead, drills a hole in his leg and inserts a pin. Vijendra is anaesthetized and so he can't point to the obvious, that his leg is perfectly fine. Later, it is discovered that the hospital confused Vijendra for another patient, Virendra, whose leg needed the surgery. It continues to remain a horrifying mystery how a doctor and his entire team in an operation theatre could not see with their own experienced eyes that Vijendra had a head injury and two healthy legs. ¹

Jhansi, March 2018. A twenty-five-year-old bus conductor, Ghanshyam, meets with a serious accident. His left leg is crushed and amputated. He is rushed to the Maharani Laxmibai Medical College Hospital in Jhansi and his family runs helter-skelter in search of a specialist. Ghanshyam's images go viral on social media and therefore make it to the national news. Why? Someone had placed his amputated leg under his head as a pillow. Worse, the hospital staff wouldn't move it despite his family's pleas. Nobody knows who placed the leg there. Ghanshyam was unconscious; the CCTV, meant to enhance accountability, was not working. Thus, the enquiry that followed would not serve too well in discovering the truth. ²

Vadodara, March 2018. A young mother undergoes a caesarian section delivery at the government-run Jamnabai General Hospital.

She is discharged after two days. A few weeks later, the woman finds herself in acute pain and starts vomiting frequently. She is taken to Delhi's Sir Ganga Ram Hospital. Several rounds of tests reveal that during the C-section, doctors had left gauze bundles in her abdomen. ³

Unnao, December 2017. The primary health centre at Nawabganj suffers from frequent power outages, as do many hospitals across the country, but on that Monday, the power shuts down even earlier. There is power back-up but there is no diesel to jump-start this facility. The doctors operate on thirty-two patients for cataract using two torches. Incidentally, this centre has only five beds. ⁴

Bilaspur, Chhattisgarh, November 2014. A group of women agree to undergo tubectomy, persuaded by incentives. The operating area where tubectomy was conducted was not sterilized and the staff reused syringes and needles. In less than five hours, eighty-three women were operated on. With no infection-control protocols in place, thirteen of them died and forty-nine had to be hospitalized. In February 2017, the doctor responsible was acquitted on technical grounds. ⁵

There was a time when such cases of medical callousness were expected only from India's BIMARU states: Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. But today, medical apathy, when not outright neglect, haunts patients even in Delhi, India's capital, which is home to municipal bodies, a state government and the national government.

In June 2017, a Delhi family mourned the death of its baby twice in two days. The baby was born twenty weeks premature and declared dead on delivery at Safdarjung Hospital. The family, while taking the baby for its funeral, found its frail body moving. They rushed the baby back to Safdarjung Hospital, where it battled for life for thirty-five hours on a ventilator, after which the same hospital declared the same baby dead for the second time. ⁶ The father, Rohit Tandon, asked, 'How can doctors not know the difference between dead and alive?' ⁷ The health ministry ordered an inquiry.

The consequence of uncaring state-run healthcare systems is reflected in the empirical data on India's ranking across health parameters. In 1990, three decades ago, infant mortality claimed eighty-nine of 1,000 children, and India ranked 156 among 194 countries. In 2017, India was still at the bottom quartile, ranked 143 with thirty-two deaths per 1,000 births, trailing Namibia, Dominica, Botswana, Tajikistan and even Rwanda. In South Asia, barring Pakistan, India trails Sri Lanka, Bhutan, Bangladesh and Nepal. ⁸

Systemic inadequacies ensure that the most vulnerable are the worst affected. In August 2017, in just twenty-four hours, twenty-three infants died in Gorakhpur's Baba Raghav Das Medical College Hospital. In a five-day period, over seventy infants admitted to the hospital's neo-natal ward for treatment of Japanese encephalitis died due to lack of oxygen supply. ⁹ The hospital did not have the required number of oxygen cylinders because the oxygen supplier had not been paid his dues.

Gorakhpur sounds far-flung, but the national capital does not. In September 2016, at the Jag Pravesh Chandra Hospital, a baby died because she was denied ventilator support. The baby was born with birth asphyxia and the doctors asked the family to make it breathe with an ambu bag, a primitive method. The poor parents, not being able to afford private hospitals, went to three other government hospitals but were turned away as beds were not available. ¹⁰ Just a month earlier, in August 2016, the health ministry, in response to the number of deaths of children in central government hospitals, had assured Parliament, 'All the ventilators and others equipment procured during the said period are functional in these hospitals.' ¹¹

India is in the company of low-income sub-Saharan countries when it comes to quality of healthcare. India scores forty-five on the Health Care Access and Quality Index, trailing Kiribati, Laos, Myanmar, Equatorial Guinea, and lags behind South Asian neighbours Sri Lanka, Bhutan, Bangladesh and Nepal. ¹² It bears mention that the average camouflages regional disparities.

The NITI Aayog conducted its own studies on the quality of healthcare across twenty-one large states and arrived at its own index. Kerala, as the topper, scores 76.55, while Uttar Pradesh

scores 33.69; Bihar with 38.46 is at the bottom of the pile. ¹³ The NITI Aayog index also shows that the states performing badly are also those spending poorly on healthcare. Bihar has a population of 110 million and Kerala 36 million. In 2017-18, Kerala allocated Rs 6,882 crore for health whereas Bihar, with three times the population, budgeted only Rs 6,668 crore. While under-five mortality rates in Kerala are at thirteen per 1,000 births, they are at sixty-one in Assam and at fifty-one in Uttar Pradesh. Similarly, maternal mortality is six per 1,000 births in Kerala while it's thirty-five in Odisha. Every second baby's birth in Uttar Pradesh and four of ten births in Bihar are not under medical care, whereas 92 per cent of the births in Kerala and 85 per cent in Maharashtra are at medico institutions.

What do India's most vulnerable and poorest children die of? Premature birth, under-nutrition, pneumonia and diarrhoea to start with. A study led by the Johns Hopkins Bloomberg School of Public Health revealed that India topped the list for pneumonia and diarrhoea deaths – claiming 2,96,279 lives, that's thirty-three per hour, in 2015, and 2,60,990 lives or twenty-nine deaths per hour in 2016. Yes, immunization helps, but the average score flatters to deceive. The 2019 Johns Hopkins study shows that even in states where immunization coverage is 70 per cent, 'less than half of the children in a poor, urban area within that state were fully immunized'. ¹⁴

Poor funding leads to poor capacity and poor quality of healthcare. The consequences are manifest in the data on morbidity and mortality. Over 9 lakh children die before they reach the age of five – that is over 100 per hour. ¹⁵ The Global Burden of Disease Report estimates that over 7.78 lakh people – adults and children – die of diarrhoeal diseases and 4.35 lakh of tuberculosis. ¹⁶

A grisly parade caused by dead policy walking.

* * *

The first study on the state of healthcare in India was urged and organized by an iconic sponsor: Florence Nightingale.

In 1854, the *London Times* reported on ‘nursing deficiencies’ in the Crimean War. Nightingale volunteered to lead a group of nurses to Scutari, now in Albania. For over twenty months, she observed the army structure and its lack of proper healthcare for those fighting on the forefront of the Crimean War. She returned to London and began campaigning, along with War Secretary Sidney Herbert, for reforms for the better care of British soldiers posted across the world. She also pushed for a thorough inquiry which resulted in the ‘Royal Commission appointed to Inquire into Regulations affecting the Sanitary Condition of the Army, the Organization of Military Hospitals, and the Treatment of the Sick and Wounded’ (1857-58). It was dubbed as Nightingale’s first royal commission, wherein she gave evidence and subsequently wrote extensively on these and allied issues like sanitary matters. A postscript in one of her essays dealt with health in India.

The sepoy mutiny in India ended the Company Raj and began the British Raj. Circumstance caught up with Nightingale’s campaign as the need for a large force necessitated an answer to the question of preserving its health. Nightingale had enough proof on how many soldiers had lost their lives due to sanitary neglect and not in combat. In July 1858, in a letter to Lord Stanley, she stated, ‘The difficulties are, as you say, very great. But what is really wanted, in the first instance, is intelligent inquiry.’ She also asked for the findings of this inquiry to be made public. Her campaign paid off.

On 31 May 1859, the *London Gazette* reported, ‘The Queen has been pleased to issue a commission under her Royal sign’, a panel of experts to be commissioners ‘to inquire into, and report upon, the measures which it may be expedient to take for maintaining and improving the health of all ranks of Her Majesty’s army serving in India.’ ¹⁷ The Royal Commission on the Sanitary State of the Army in India conducted its studies between 1859 and 1863. Again, Nightingale provided her own inputs, a ninety-two-page report called ‘Observations’, which noted that at the core of the issue was sanitation and hygiene. ‘The observance of sanitary laws should be as much part of the future regime of India as the holding of military positions or as civil government itself. It would be a noble beginning of the new order of things to use hygiene as the handmaid

of civilization.’ ¹⁸ Nightingale termed the completion of the report as ‘the dawn of a new day for India – not only for our army there, but for the poor natives’. ¹⁹

This was the first review of the state of sanitation, its impact on living and the state of healthcare in India. In accordance with suggestions, commissions of public health were established in Madras, Bombay and Calcutta in 1864. There were far-reaching recommendations, including recruitment of trained public health staff in towns and districts. But the recommendations were not implemented as there was no comprehensive policy on services for preventive healthcare. In 1888, following the creation of local bodies, the Government of India did draw their attention to matters of sanitation. On the ground, nothing tangible was done.

In 1896 came the plague and in 1904 followed the report on it by the Plague Commission. Their findings called for the setting up of an administrative structure. The enactment of the Government of India Act of 1919 and the submission of Mont–Ford Reforms report ushered in steps – the creation of the department of public health, sanitation and medical administration. ²⁰ Subsequently, the Government of India Act of 1935 decentralized public health to provincial governments and then in June 1937 it established the Central Advisory Board of Health, which appointed committees and received recommendations. As it turned out, the exercise did not amount to much on the ground. The challenge was in the name itself. It was not ‘central’ as the powers to implement were with provinces and the board had little power beyond being an advisory body. Even the enactment of the Model Public Health Act in Madras came to naught, owing to political stalling, structural and coordination issues, lack of funding and, most certainly, the war.

Towards the end of World War II, on 25 October 1943, the Government of India announced the appointment of the Health Survey and Development Committee ‘to make a broad survey of the present position in regard to health conditions and health organizations in British India and to make recommendations for future development’. Emphasizing that ‘a drive to improve health conditions must necessarily be at the forefront of any programme directed towards improving the standards of living’, the committee,

with twenty-three members, including health practitioners, was led by Sir Joseph Bhore.

The report of the Bhore Committee is perhaps the most comprehensive documentation with extensive recommendations covering every aspect that has a causal effect on the quality and quantity of healthcare. One half of all deaths in British India, the report said, were of children under the age of ten and over two lakh mothers died in childbirth; infant mortality was horribly high. Lt Col J.A. Sinton estimated in this report that malaria alone, which claimed over a million lives, cost the economy between Rs 1,470 million and Rs 1,870 million, in a GDP of around Rs 100 billion.

It documented existing capacity. British India had 21.25 lakh beds – less than one per 1,000, whereas the minimum needed was ten per 1,000. There was one doctor for 6,300 people and one nurse for 43,000. It recorded that tuberculosis claimed half a million a year and warned ‘industrialisation and urbanisation would lead to higher incidence of sickness unless measures were taken’. ²¹ So thorough was the Bhore Committee report that it included the state of preventive healthcare, indigenous systems and the quality of medical education down to the syllabus in its three volumes spread across 1,111 pages.

The principle underlining the Bhore Committee report was, and should continue to be, ‘No individual should fail to secure adequate medical care because of an inability to pay for it.’ The system must provide end-to-end care beginning with a programme with special emphasis on prevention; health consciousness should be stimulated through education and public-participation programmes; training should enable a doctor to be a social physician who can guide people; expenditure in healthcare must be viewed as an investment in human capital; housing, sanitary surroundings and safe drinking water supply are prerequisites for health; medical service should be free to all and funded by taxation; the government must fund and create a cadre of medical professionals. The Bhore Committee also provided the how-to on steps for an immediate, short-term programme in two five-year tranches as well as a long-term programme.

The report, submitted in 1946, figured in the debates of the Constituent Assembly – on allocation of functions between the Centre and the states, on funding, on institution-building – and with this came the realization that when the Constitution of India guarantees the right to life, it therefore, by implication, guarantees the right to health for all. The imperative for a healthy republic finds expression in Article 47 of the Constitution of India: ‘The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties.’

The template of India’s healthcare system was based on the Bhole Committee report and it influenced India’s Five-Year Plans with at least the intent to provide healthcare. In 1952, the First Five-Year Plan listed the provision of water supply and sanitation, control of malaria, preventive healthcare for rural areas through centres and mobile units, health services for mothers and children, education and training, self-sufficiency in drugs and equipment and family planning as its priorities. To fund all this, it was recommended that at least 10 per cent of the plan outlay be devoted to health; it received less than five per cent. Out of the allocated Rs 140 crore, only Rs 101 crore was spent. Nevertheless, the Second Five-Year Plan allocated Rs 225 crore out of its Rs 4,500 crore plan for health.

[22](#)

To bridge the capacity gaps in medical expertise, the government entered into partnerships with the World Health Organization (WHO) for contagious diseases and with the United Nations Children’s Fund (UNICEF) for advice on nutrition and health of the mother and child. The government also sought help to set up institutions and the All India Institute of Medical Sciences (AIIMS) was set up under the Colombo Plan. Expertise for water, sanitation and disease control came from the US under the Technical Cooperation Mission. The Rockefeller Foundation pitched in with fellowships and research grants. The Ford Foundation curated and funded projects on sanitation. The Soviet Union contributed aid for equipment and training.

It wasn’t all allopathy. In 1947 the Chopra Committee and in late 1948 the Pandit Committee suggested ways to revive Ayurveda. The

Centre for Research in Indigenous Medicine and other postgraduate institutions of research were formed. Recommendations from the Dave Committee in 1955 and the Uduppa Committee in 1958 led to the creation of the Central Council for Research (CCR) in Indian Medicine and Homeopathy, which was later split into Unani, Homeopathy, Ayurveda, Siddha Yoga and Naturopathy.

A decade after Independence, the reality of the gap between ambition and attainability came to the fore. In 1959, Sir Lakshmanaswami Mudaliar – who had done pioneering work on maternal mortality and had been part of the Bhore Committee – was appointed to review the state of healthcare and make some more recommendations. In his report submitted in 1962, he said, ‘It would neither be practicable to provide medical coverage in the near future on the scale visualized by the Bhore Committee, nor would it be feasible for the state to extend such coverage on the basis of a medical care service, free to all.’ The Mudaliar Committee highlighted issues of funding and structural incapacity daunting implementation.

The challenge of providing healthcare was examined by a succession of committees – Chadha in 1963, Mukherjee in 1965, Jungalwala in 1967, Kartar Singh in 1973, Shrivastav in 1975 and Bajaj in 1986. The recommendations covered malaria eradication, integration of health and family welfare, staffing hierarchies required for family welfare programmes, campaigns for eradication of smallpox and leprosy, medical education and setting up of primary health centres.

There were committees and then there were Five-Year Plans. Every Five-Year Plan paid homage to the need for healthcare. The first one stated: ‘Health is fundamental to national progress in any sphere. In terms of resources for economic development, nothing can be considered of higher importance than the health of the people.’ The second aimed to bring health services ‘within the reach of all the people’. The third aimed to ‘ensure a certain minimum of physical well-being’ and focus on preventive health services. The fourth discussed ‘a primary health centre in each community development block.’ The fifth, during the Emergency, promised

expansion of rural health services while funds were focused on family planning.

The Queen's commissions and the Kingly committees, studies and Five-Year Plans – all that wealth of research and recommendations, the where, the when and the how of what was needed to be done. Fact is, in the first three decades after India's Independence, the health ministry was the ministry of epidemics – not even the containing of them, merely dealing with the after-fact of such epidemics. Family planning initially consumed a major chunk of funding and occupied much political and administrative attention. In general, every plan set targets for schemes and these would be redesigned in the next one.

Compounding this confusion was the structural approach of the government in attempting to fix manifold problems – sanitation, nutrition, maternal and infant health, provision of primary health centres, hospitals and clinics – with one umbrella allocation. The focus was on rural areas while it was found that implementation was higher in urban areas, which at that time accounted for less than 20 per cent of the population. Typically, governments attempt to solve many problems with every rupee allocated. Multiple objectives can, and often do, lead to multiple failures – this is true for India, in both healthcare and family welfare programmes.

Intent is viewed as action, and trains of intent chug on. In September 1978, the World Health Assembly held at Kazakhstan (then Kazakh Soviet Socialist Republic) called upon governments to achieve 'Health for All by 2000'. Known as the Alma Ata Declaration, a part of it says, 'The existing gross inequalities in the status of health of people particularly between developed and developing countries as well as within the countries are politically, socially and economically unacceptable.' The aim was to enable people to 'a level of health that would permit them to lead a socially and economically productive life'. [23](#)

India was among the signatories. Call it the Alma Ata effect. The government felt spurred to open the foreword to the Sixth Five-Year Plan with Rabindranath Tagore's words: 'The day will dawn. Hold thy faith firm.' Gurudev's verse, actually, is: 'Hold thy faith firm, my heart, the day will dawn.' The misplacing of sequence and

assertion was steeped in irony. Symbolic too, since the promise made in the Constitution and in every Five-Year Plan was yet to be acted on.

India's politicians were under pressure. Spurred by a chorus of demands – five years following the Alma Ata Declaration and thirty-six years after Independence – India unveiled its first National Health Policy (NHP) in 1983. It stated, 'The demographic and health picture of the country constitutes a cause for serious and urgent concern.' The 'existing picture', as the policy put it, was a litany of unfulfilled promises.

The policy critiqued everything: the overall approach, the 'focus on curative centres based on western models', the neglect of primary, preventive and promotive healthcare and of indigenous systems. The NHP also called for universal healthcare with a long list of multiple objectives and targets.

The verbiage and the arrangement of angry words did not translate into action. Healthcare in India remained an unfinished agenda.

* * *

The need for healthcare – for an alternative in the face of systemic failure – was dire. An individual's initiative arrived at the intersection of this medical and health crisis.

Dr Prathap Reddy could have been yet another successful doctor in the US, living a very comfortable life in Boston and practising as a cardiologist at the Massachusetts General. Born in the Chittoor district of what was then Madras Presidency, Dr Reddy studied at Christian Medical College before his career took him to the UK, then to Missouri in America and thereafter Boston. His family back home was justifiably proud of his achievements. And then one day, there was this chance telephonic conversation with his father, Raghav Reddy, who had wanted him to be a businessman. He said, 'Make more than just your family happy.' He decided to return to India. Dr Reddy recalls his colleagues saying, 'You are being sentimental and foolish. This is a blunder.'

In 1979, a young man in his thirties came to see Dr Reddy at his clinic. It was in October; Reddy remembers the month and year well. The young man's condition was diagnosed and the best person to treat him would have been Dr Reddy's guru, Dr Denton Cooley. The kind of surgery required was not possible in India and the young man did not have the money to travel nor for the procedure. Two months later, the man died. [24](#)

On his deathbed were his young widow and two children. A father of four, Dr Reddy was haunted by the image of the grieving family for months thereafter. He asked himself, 'Why couldn't the procedure be done here? Why can't we set up the kind of hospitals the world takes for granted?' He asked the same question aloud and heard others lament about the reality of India's healthcare landscape.

That day, Dr Reddy decided somebody had to fix this. If it had to be him, so be it. His friends and other colleagues were highly sceptical when he announced that he would build a super speciality hospital. 'Sweet irony,' recalls Dr Reddy with a smile, 'as my father wanted me to be a businessman.' He identified a plot of land on which he could set up a 250-bed hospital and asked his daughters for a name. Among the many suggestions, his daughter Suneeta came up with Apollo, the Greek god of healing.

Dr Reddy, armed with ideas, adopted the ways of the American medical system and faced challenges he didn't even think existed. In the early eighties, Indians couldn't buy large tracts of land thanks to the Urban Land (Ceiling and Regulation) Act, 1976. The political ideology of the time was about self-reliance, which meant doing without critical machinery, equipment and technology. The law did not allow the import of medical equipment. When it did, there were prohibitive duties to be paid – over 300 per cent – which made the import and user charges exorbitant for the hospital and patients. During the time of the Foreign Exchange Regulations Act, Indians couldn't get clearance from the Reserve Bank of India, which controlled foreign exchange. Most critically, hospitals couldn't easily raise funds.

Navigating these clearances required tenacity. Dr Reddy knocked on many doors, waited outside many a politician's office, kept

calling upon friends to find friends who had politicians as friends. G.K. Moopanar, a Congress strongman of that time from Tamil Nadu, offered to take him to meet Prime Minister Indira Gandhi so that he could explain how the web of clearances and charges was not allowing his hospital to get off the ground.

Serendipity accompanied Dr Reddy. Indira Gandhi had just come back to power and was mulling over how to stop brain drain; how to persuade qualified professionals and intelligent Indians from leaving the country. Dr Reddy recalls, 'I told Mrs Gandhi only the rich and powerful get access to healthcare. She gave the first impetus by telling everybody that here's a man who wants to reverse the brain drain.'²⁵ She not only heard him out patiently and praised him, she also issued instructions to the cabinet secretary. The duties on import of medical equipment were reduced to zero, provided the hospital agreed to a quota of patients who would be treated free of cost.

There were still the other issues of the land ceiling law; the clearance of foreign exchange from the Reserve Bank of India, which was then headed by Dr Manmohan Singh; and the funding, which meant Apollo would have to be a corporation and would have to be listed, and that would require convincing investment bankers. Every week, Dr Reddy would travel to Delhi from south India to meet one set of bureaucrats for a particular issue and then another for another issue. Phase by phase, he doggedly began building India's first super speciality hospital from scratch.

The money came after the issue of shares and the listing of Apollo Hospitals – the first healthcare company and the first funded by a public issue. Dr Reddy reached out to non-resident Indians (NRIs), investors in the Gulf countries and in South-east Asia. The hospital was inaugurated by Giani Zail Singh, then President of India, on 18 September 1983. The many meetings, the many presentations and the many persuasive arguments had paid off. Dr Reddy calls this process 'the principle of 3 Ps: purity of purpose, patience and persistence'. The very first operation was that of a baby with a hole in its heart. The surgery was successful and it brought hope and challenges to the fore.

Dr Reddy quickly understood that it was not enough to set up hospitals and provide treatment. Healthcare also needed to be made accessible and affordable. It would be pointless to create the supply side without addressing the demand side. Till the mid-eighties, medical care was split into two distinct silos. One silo encompassed those who were looked after by their employers, either through reimbursements or direct pay to the medical provider. The other group of people depended on government hospitals and on private savings, whereas the poor depended on charity or divine provenance. Making medical care accessible to those who had only themselves and their life savings to depend upon called for instruments to make it affordable, such as the pooling of risks and resources, formally known as healthcare plans (now also called mediclaim), which enable accessibility by spreading the costs and risks. A large number of people pay premium but not all of them fall sick, and the treatment costs of those who do are covered by the premium collected.

Medical insurance dates back to the 1920s in the United States. An official at Baylor University Hospital in Dallas hit upon the idea of a fixed-sum subscription to teachers in Texas that entitled them to treatment paid for by Baylor Hospital. The idea got christened as Blue Cross and expanded during the Depression era when employers stepped forward to pay for employees. By the 1960s, two-thirds of Americans had acquired health cover.

India's planners, it can be argued, were influenced by the Soviet Semashko System, which made available free care at the point of use, was funded by taxes and operated on a highly centralized multi-tiered template. All healthcare workers were employed by the state and private practice was not allowed. India inducted a model where outcomes were defined by the Centre and the implementation was with the states. Private practice was not barred. Effectively, the government suffered from a lack of resources and ability to deploy personnel, and outcomes suffered from systemic disconnect. Post the collapse of the USSR, Semashko became a hybrid (private insurance, public healthcare) model.

It is not that the concept of collective risk management – for wider benefits through insurance – was alien to India. The first

insurance company, Bombay Mutual Life Assurance Society, was set up in 1870 and was followed by the Bharat Insurance Company in 1896, and then United India, National Indian, National Insurance and Hindustan Cooperative Insurance Company, which was formed in one of the rooms of Jorasanko, the house of Rabindranath Tagore. This was followed by the enactment of the Life Insurance Companies Act in 1912. At the dawn of Independence, there were over 100 insurance companies and societies. In 1956, the government nationalized 154 Indian insurance companies, sixteen non-Indian companies and seventy-five provident fund companies. Yet, even after the nationalization of insurance and the subsequent expansion of life and general insurance, the idea of health insurance – mediclaim – did not pop up on the programmatic radar of the Government of India.

The availability of health insurance would make private health care affordable and Dr Prathap Reddy knew this. He put his idea and network to work again. To explain the possibilities and potential, he petitioned then Prime Minister Rajiv Gandhi. He explained to the PM, ‘If India is to have twenty-first century healthcare systems, the government needs to make premium paid for health insurance exempt from tax.’ Dr Reddy today truly believes that while Indira Gandhi did help out, ‘the man who changed the face of healthcare in the country with his vision and clarity was none other than Rajiv Gandhi’.

On Rajiv Gandhi’s direction, then Finance Minister V.P. Singh designed and introduced a clause in the finance bill to empower the cause. On 28 February 1986, while presenting the Budget, V.P. Singh spoke about how the healthcare needs of salaried employees were covered by companies but no system existed for self-employed people. ‘In order to provide some relief in respect of medical expenses by such persons, I propose to allow a deduction out of the total income of such persons, subject to limits, of the amount spent by them on medical treatment or paid as premium on medical insurance policies taken by them with the General Insurance Corporation of India.’ The idea of tax exemption for medical insurance with a cap of Rs 15,000 came into being.

This tax exemption, suggested by Dr Reddy and inducted by Rajiv Gandhi, brought clarity and created a pathway – access to healthcare required resources and organization, in both of which the states and Centre were found wanting. Following the creation of the window, the Seventh Five-Year Plan announced a policy to ‘encourage private initiatives, private hospitals/clinics’ with suitable tax incentives subject to minimum standards of patient care. It also relaxed the setting up of medical colleges and hospitals. Specialized hospitals were also to be used for tertiary care and health manpower development.

Opportunity and circumstance drove the setting up of private hospitals. The balance of payments crisis of 1991, which necessitated the pledging of gold reserves for a bailout (detailed in my book *Accidental India*) and borrowing from multilateral agencies, resulted in the cutting down of expenditure – essentially, allocations across the social sectors. One of the sectors hit by spending cuts was healthcare. In the entire five-year period from 1992 to 1997, only 6,093 sub-centres, 3,478 primary health centres and 723 community health centres were added, leaving six villages to be attended by one sub-centre, one primary health centre to be shared by twenty-seven villages and one community health centre between 227 villages. ²⁶

The widening gap between need and availability in healthcare popped up on the political radar and came up in several meetings of the National Development Council (NDC). The chief ministers of states wanted the Centre to increase funding to states to enable the expansion of healthcare. It was not unknown that funds were scarce. The situation called for out-of-the-box thinking. On 18 September 1993, at the forty-sixth NDC meeting chaired by Prime Minister P.V. Narasimha Rao, Sharad Pawar, then Chief Minister of Maharashtra, mooted delineating of responsibility for capacity creation between public and private entities. He said, ‘The curative part of the health sector should be left for private professionals and government efforts should be diverted to providing preventive care. The government should concentrate on areas of epidemic control, creation of data banks and dissemination of latest information on invention and development in the medical field to the private

practitioners.’ ²⁷ The idea struck a chord among the CMs and Rao directed policy-makers to take it forward.

In December 1995, while replying to Rajya Sabha MP Sanjay Dalmia, Health Minister A.R. Antulay signalled the shift in stance: ‘The government wants wider participation of the private sector in the healthcare services.’ ²⁸ To enable the private sector, a regime of lower direct taxes, customs duty cuts, higher depreciation for equipment and a five-year tax holiday for rural hospitals was announced. The quid pro quo, Antulay revealed, was that 30 to 40 per cent free beds for the poor against the concessions given by the government would be provided.

The reformist measures to enable the private sector to create capacity were propelled by pragmatism and the bitter reality of failure. The Ninth Five-Year Plan confessed rather candidly, ‘There has not been any reduction in the communicable diseases and nutrition-related morbidity. There has been a progressive increase in the non-communicable disease burden, occupational and environmental health-related problems.’

Driven by the demand, private sector healthcare facilities galloped. In 2002, of the 15,393 listed hospitals in India, government-owned facilities constituted less than a third. Over two-thirds of the hospitals – 11,345 hospitals with 2,63,356 beds – were run by private and voluntary organizations. Of the 22,291 total allopathic dispensaries, only 9,856 were funded and run by the government.

* * *

The lament about India’s seemingly insoluble problems is rarely about intent or ideas. It has always been, and continues to be, about resources and their effective use amidst perpetual administrative sloth. And nowhere was this more visible than in the enabling of access to healthcare. The second National Health Policy, in 2002, laid bare the gap between promise and performance. Investment in health was an abysmal 0.9 per cent of the gross domestic product (GDP). Per capita public health expenditure was Rs 200. Of every rupee spent on healthcare across India, barely 17 paise came from

the national exchequer – 83 per cent was being paid by citizens. The NHP stated rather bluntly, ‘It is no surprise that the reach and quality of public health service has been below desirable standard.’

[29](#)

For perspective, compare need and availability. Census 2001 put the population of India at 1,028 million or 102 crore. In 2002, a full five decades after India had declared itself a republic, the country had 15,393 hospitals with 6,83,545 beds. This translates to one bed for 1,500 persons. Over seven of ten people lived in rural India and were forced to depend on 1,37,311 sub-centres, 22,875 primary health centres and 3,054 community health centres. Of the 15,393 hospitals, only 2,446 or one in six hospitals and barely 57,042 beds were available for 700 million people living in rural India. That’s one bed for 12,000 persons. [30](#)

Clearly, this was neither defensible nor sustainable. The spectre was similar to what the 1946 Bhore Committee had observed: ‘In Bengal, the ratio of doctors to the population is three and a half times more in urban than in rural areas. In Sind the proportion is much higher, the doctor to population ratio in urban centres being about forty-nine times that for the rural areas. When it is remembered that about 90 per cent of the total population live in villages, the extent to which provision for skilled medical aid is lacking in the country as a whole becomes emphasised.’ [31](#) The committee had pointed out that ‘before any reasonably rapid expansion of health services can be carried out, the available numbers of health personnel under the different categories will have to be increased considerably.’ [32](#)

On 12 April 2005, the government decided to address this gap by setting up a National Rural Health Mission (NRHM). The words of Prime Minister Manmohan Singh at the official launch of the NRHM must have given déjà vu a sense of déjà vu: ‘Many villages in India today do not have even a rudimentary healthcare provider.’ He pointed out design flaws and that the sub-centre ‘is planned for population and not habitation’, the nearest hospital of primary health ‘is a halfway house between in-patient care and outreach activity, unable to do either’, which was why its facilities were

unutilized. The system, he observed, was failed by the lack of integration apart from action on ‘safe water, sanitation and nutrition and building them into a workable healthcare system’, and lacked accountability because the monitoring of systems was structured upwards towards the bureaucracy and not towards the community.
[33](#)

Insufficiency of healthcare located in systemic sloth was manifest as a stark tragedy in survey after survey. The fifty-second NSS, conducted in 1995-96, revealed that many of the ailing had given up the ghost about getting better. Nearly one in four or over 24 per cent cited the financial cost as the factor for not seeking medical treatment even when they were quite ill and 4 per cent had no faith at all in government healthcare services.

Of those who did go for non-hospitalization treatment, a whopping 81 per cent chose treatment from non-government sources – 64 per cent in rural India and 72 per cent in urban India. The survey says, ‘It is seen that private doctors were the most important single source of non-hospitalized treatment.’ [34](#) Of those who needed hospitalization, over 56 per cent preferred to admit themselves in private or charitable institutions.

A decade later, the sixtieth NSS in 2004 found that eight of ten Indians – 78 per cent of rural and 81 per cent of urban Indians – preferred to go to private doctors and hospitals for non-hospitalized treatment. When they had no choice but to admit themselves, 58 per cent of those in rural areas and 62 per cent of those in urban areas paid for private facilities. The survey concluded on a sombre note about the progressive decline ‘in the reliance on public-sector institutions’. Only 5 per cent of people in poor and populous Bihar, for instance, chose public hospitals for treatment.

The situation had only worsened despite the government spending on health rising – from Rs 3,049 crore in 1986-97 to Rs 10,179 crore in 1996-97 to Rs 36,803 crore in 2003-04. [35](#) Public health also worsened, visibly. In 2005, Health Minister Dr Anbumani Ramadoss co-authored a piece for *Lancet* in which he stated that ‘chronic diseases contribute to 53 per cent of deaths and 44 per cent of disability-adjusted life-years lost’; cardio-vascular diseases were on the rise; ‘demographic and socioeconomic factors are hastening

the health transition, with sharp escalation of chronic disease burdens expected over the next twenty years'. [36](#)

A decade later, in 2014, the seventy-first NSS found little changed. Despite the presence of government-run facilities offering ostensibly free treatment, 70 per cent of ailments (72 per cent in rural and 79 per cent in urban areas) were treated by private doctors. On hospitalization, 58 per cent of rural folks and 68 per cent of urbanites preferred to be admitted to private healthcare facilities.

This wasn't about choice but the lack of one. People, especially the poor and the middle-class, can get impoverished with out-of-pocket expenses while trying to gain access to decent healthcare. Sakthivel Selvaraj, Habib Hasan Farooqui and Anup Karan, in their study for the *British Medical Journal*, calculated the impact of out-of-pocket (OOP) expenses borne by the poor for private healthcare. Using NSS data, they proved that despite schemes for free and subsidized medicines, 'head count ratio of households impoverished due to OOP payments rose between 1993-94 and 2011-12.' In 2011-12, this resulted in fifty-five million persons falling below the poverty line – of this, nearly thirty-eight million were hit only because they had to spend to purchase critical medicines. [37](#)

The quality, or rather the lack thereof, of healthcare is governed by the law of necessary and sufficient conditions – capacity, access and affordability and quality of services. Let's examine the capacity issue. As per the National Health Profile 2019, India has 11,54,856 registered allopathic doctors for 1.35 billion or 135 crore persons. [38](#) The government assumes 80 per cent availability and estimates roughly 9.27 lakh doctors 'may be actually available for active service', translating into a ratio of 1 doctor per 1,456 persons as against the WHO norm of 1 doctor per 1,000 persons. [39](#)

This means India must add at least 5 lakh medically educated and trained persons to the current stock of allopathic doctors for the current population and add more for future growth. How is India placed to do that? In 2018-19, there were 58,756 students enrolled in 504 medical colleges – all of them will need to get the basic medical degrees to be considered as qualified for even the basic dispensary/clinic. Even then, it could take ten years to bridge the

gap. Indeed, between 2010 and 2019, the number of registered allopathic doctors increased from 8.27 lakh to 11.54 lakh – an addition of around 32,000 a year. [40](#)

The doctor–population gap worsens as the data is drilled down. Of the 8.33 lakh allopathic doctors, only 1,16,757 are on government payroll – that’s one government doctor for over 11,000 persons. [41](#) Then, there is the urban–rural divide. Over 70 per cent of the doctors are located in urban India, which means 70 per cent of the country’s population living in rural areas must make do with 30 per cent of the doctors. In March 2019, Bihar, with a population of nearly eleven crore, had 40,649 registered allopathic doctors while Uttar Pradesh, with over twenty-two crore people, had 77,549 doctors. There are also the 7.88 lakh AYUSH doctors – Ayurveda, Unani, Siddha, Homeopathy – of whom around 6.1 lakh are assumed to be available, which draws down the ratio to 1:867. [42](#) To be noted: 95.9 per cent of males and 94.9 per cent of females in India seek medical treatment from allopathic doctors. [43](#)

Every health committee, new health policy and Five-Year Plan since Independence has pointed to the need to increase spending on the health sector – between 4 and 6 per cent of the GDP. Yet, spending on health has barely been 1 per cent of the GDP. Smaller economies have done it and the results show. The per capita expenditure on health in India is worse than in Timor-Leste, Indonesia, Sri Lanka and Bhutan. [44](#)

There is, of course, the issue of the quantum of allocation, but there is also the problematic quality of spending. Absolute spending has improved in the new millennium. Total government spending – Centre and states together – has gone up from Rs 27,903 crore in 2000-01 to Rs 2.76 lakh crore in 2018-19. [45](#) The typical government spending on adding only physical infrastructure has already been proved flawed; the physical presence of a brick-and-mortar structure is no guarantee for access to decent healthcare. Especially not when allocations for physical infrastructure often listed on records are absent on the ground.

On 12 April 2018, the Hindi television channel ABP News ran a programme called Ghanti Bajao [46](#) (ring the bell). In its crisp

reportage with moving images, it examined the state of public health services in Madhya Pradesh. In Mograram Sihor, the primary health centre was encroached upon by someone who had placed his cattle in the building – cows, bulls and buffaloes. The Gadhiyamer Rajgarh sub-health centre had dung cakes on the wall and sawdust inside, not medical staff, and therefore no patients. The sub-centre at Daulaj Rajgarh had a lock on it because the local muscleman was using it to store his tractor and materials for his tent business. In the Kuchwada Raisen sub-centre, the beds were broken and some medicines could be seen tossed in a rusty trash can. A built-in-2017 primary health centre in Bhaukhedi Sihor had a lock on it. In Raipur, the Hoshangabad sub-health centre was locked. The clinic timings were 9 a.m. to 4 p.m., but often the doctor didn't turn up till noon (that was if he showed up at all, which on average was not more than twice a week). In Jasalpur, the doctor in the decrepit clinic had no water or electricity and there wasn't any staff either.

What happens when there is an emergency and the patient's family dials 108 for an ambulance and it actually arrives? Consider the incident at a health centre in Raisen-Sultanpur. An elderly unconscious woman is brought by ambulance to this centre. The nurse is present but the doctor has not turned up for ten days. The nurse tries to do what she can for the unconscious patient and then tells the ambulance service to take the patient to the district hospital. The ambulance driver tells the patient's kin to make their own arrangements. The nurse dials 100 and she dials 108 again and again, even as hope fades.

Actual on-ground assistance to a patient in her/his hour of need is mostly missing. In their 2004 study of Rajasthan's healthcare systems, Nobel laureates Abhijit Banerjee, Angus Deaton and Esther Duflo revealed that 'on average, 45 per cent of medical personnel are absent in sub-centres and aid posts, and 36 per cent are absent in the [larger] primary health centres and community health centres'. It's worse at the sub-centres staffed by only one nurse and 'high absenteeism means that these facilities are often closed: we found the sub-centres closed 56 per cent of the time during regular opening hours'. ⁴⁷ Where there is neither timely nor adequate healthcare, Rajasthan's patients turn to alternative sources

like soothsayers, religious minstrels called bhopas and quacks also known as 'Bangalee doctors'. Rajasthan and Madhya Pradesh typify the general picture.

Poor capacity has consequences, like keeping people mired in poverty. In *Health and Morbidity in India 2004–14*, Shamika Ravi, Rahul Ahluwalia and Sofi Bergkvist write, 'Impoverishment caused due to poor health has remained unchanged over the ten years.' In this period, central government spending on health went up from Rs 36,000 crore to Rs 1.39 lakh crore. Their report adds, 'We estimate that overall percentage of Indian households that fell below the poverty line due to OOP health expenditures has remained unchanged at approximately 7 per cent of the population.'⁴⁸

India's rural healthcare system is a three-tiered pyramid – the sub-centres cater to habitations of 3,000 to 5,000, primary health centres to between 20,000 and 30,000 people and community centres are for populations up to one lakh. How well-equipped are these government facilities? Do they have even the basics – water, electricity, doctors or staff – needed to run a health centre? The numerical trail of denial is manifest in data collected by the government and known to the government – the picture of what must be and what is.

A tier-by-tier review shows the appalling state of affairs. At the bottom of the pyramid are the sub-centres. Of the 1,58,417 sub-centres, 26,360 are without a water connection, 39,122 are without electricity and 15,623 lack approach roads. The primary health centres are the next tier. A healthcare facility should be open round the clock. Only 9,492 of the 25,743 primary health centres function 24x7. One of two, or 55 per cent, or 14,797 of 25,743, function with just one doctor – that's one doctor per 30,000 persons. An unbelievable 1,494 primary health centres, meant to cumulatively cater to nearly 45 million persons, don't have doctors on the premises. Of the 34,417 sanctioned posts for doctors, 8,572 are vacant. The status of support staff is equally bad – 8,900 primary health centres are without lab technicians, 4,023 are without pharmacists and 7,230 do not have a lady doctor.⁴⁹ One third of the primary health centres are without a labour room, 1,313 without water connection, 823 without power and over half don't have a

telephone connection. The community health centres are at the top of the three-tiered pyramid and therefore require specialists – surgeons, gynaecologists, physicians and paediatricians. The number of specialists required are 22,496. The number of posts sanctioned is 13,635. The number of specialists in position is 4,074. Effectively, the community health centres only have one-fifth of what they need. [50](#)

The inadequacy of public healthcare systems means that the poor pawn and borrow to pay for healthcare at private hospitals. The cost of such medical treatment pushes millions into – or back into – poverty. This cost, politicians realized, can have political consequences. The blowback on rising healthcare costs can be a negative vote, and this is what has propelled politicians to review options.

Some time in 2007, politicians and parties formed a consensus that given the state of public healthcare systems, medical insurance should be made available to the poor to access treatment from private health centres. The idea, of partly offshoring the state's obligation, had occurred to babus much before politicians were pinged by vote-bank alerts. Typically, the idea was not born in the health department. Medical insurance as a welfare instrument was first conceptualized at the Department of Labour Welfare. The original was tweaked and presented as the Rashtriya Swasthya Bima Yojana for those below the poverty line (BPL). Minimalist to the bone, the scheme offered each BPL family a cover of a measly Rs 30,000 for over 700 procedures at 5,000 public and private hospitals.

Its political appeal caught the imagination of the chieftains of regional parties and Congress satraps in the states. Soon enough, states like Andhra Pradesh, Tamil Nadu and Maharashtra redesigned the original template, ramping up coverage to up to Rs 2 lakh and adding many more procedures derived from localized health ailments data. The magnitude of the need and use – and the hazards of cost inflation – is reflected in the usage. By 2016-17, more than 335 million persons had sought and secured health cover across the states.

This worsening state of public healthcare systems and the growing dependency of the state on private healthcare facilities to deliver on the promise of Article 47 ⁵¹ found formal admission in the National Health Policy of 2017: ‘There are many critical gaps in public health services which would be filled by strategic purchasing. Such strategic purchasing would play a stewardship role in directing private investment towards those areas and those services for which currently there are no providers or few providers. ⁵² ‘Strategic purchase’ – outsourcing public healthcare from private providers – found expression in the National Health Protection Scheme announced in the Budget of 2018. Popularized as Ayushman Bharat and tagged as the Pradhan Mantri Jan Arogya Yojana (PMJAY), it promises 100 million families – roughly 500 million persons – a coverage of Rs 5 lakh per family. The government proposed to pay around Rs 1,100 per family as premium. The scheme – inaugurated in Ranchi, Jharkhand, in September 2018 – is evolving (as of December 2019) and covers over 1,300 procedures. In the winter session of Parliament in 2019 (November-December), the government said that since its inception, 5.48 million claims for Rs 7,608 crore had been received. ⁵³

The design of Ayushman Bharat on who is eligible raises problematic questions of who is poor and therefore who can be left out. The confusion is confounded by the differing matrix for subsidized food and subsidized healthcare. The National Food Security Act covers 75 per cent of the population whereas Ayushman Bharat covers 10.74 crore families or around 530 million, which is roughly 50 per cent of the population. ⁵⁴ The assumption that many people do not need healthcare coverage just because they get their monthly quota of 35 kg of food grain at Rs 105 is at the very least baffling.

The promise of coverage is also punctuated by conditionalities for eligibility based on deprivation categories identified under the SECC (socio-economic caste census). The list of those excluded includes those who own motorized two-wheelers, three-wheelers and four-wheelers. Those who own a fishing boat are also excluded, as are those who own mechanized agricultural equipment such as

tractors. Others not getting this healthcare coverage include those who have a Kisan Credit Card with a Rs 50,000 limit, those who own a house with three rooms and pucca walls and roof, those who own refrigerators and/or a landline phone, etc. Add to this, people who own more than 2.5 acres of land with irrigation or who are raising two or more crops on 5 acres. Any household with a member earning Rs 10,000 per month, government employees and those paying income tax are also excluded.

In terms of political optics, Ayushman Bharat might still suggest that it's the world's largest paid-for, insurance-driven healthcare programme. But it suffers from poor capacity and dependence on private hospitals. For instance, a scheme that must cover 500 million persons had, in February 2019, only 16,000 hospitals empanelled to deliver services. The success of this programme depends on the ability of the government to fund its expansion. Already, doctors/service providers are clamouring for better rates and insurance companies are asking for higher premium per covered household – already, public sector insurance companies are reporting 110 per cent net claims for managing existing insurance schemes – which means the payout is higher than the premium collected. [55](#)

The challenge for any insurance-based healthcare scheme is to get the 'C's right: conceptualization, costs, coverage and capacity. Critical for success is the integration of policies and backward and forward linkages – from prevention to primary care to tertiary care to speciality and elderly care, the senior citizen population being over 100 million. Charu Sehgal, partner at Deloitte, believes, 'Success demands getting the template right, healthcare needs to be a continuum from prevention onwards and any gap will lead to failings.'

Outcomes depend on the ecosystem for prevention and expansion of primary care. The track record of governments over the past seven decades is not inspiring. The government is also promising to convert 1.5 lakh sub-centres and primary health centres into health and wellness centres. Based on the first year's target of 19,000 centres, it could take a decade. [56](#) Remember, it took thirty years or six Five-Year Plans, from 1985 to 2017, for the government to add

26,000 sub-centres, 6,979 primary and 3,714 community health centres.

In 2004, India had 1,42,655 sub-centres, 23,109 primary and 3,222 community health centres. It had 3,964 rural hospitals in 5.9 lakh villages with 1,11,872 beds for a population of over 700 million – effectively, one hospital for 151 villages and one bed for over 62,000 villagers. The total number of government hospitals, both in rural and urban areas, was 7,008 with 4,69,672 beds – that is, each government hospital served 1,56,556 persons and each bed served 2,336 persons. [57](#)

In 2017, India had 1,58,417 sub-centres, 25,743 primary and 5,624 community health centres for six lakh villages. There are 21,403 government hospitals for 5.9 lakh village with 2,65,275 beds for an 880 million-plus rural population – that translates to one hospital for thirty villages and one bed for over 3,300 persons. Across rural and urban India, the government has 25,778 hospitals with 7,13,986 beds – that is, each government hospital is supposed to serve more than 52,370 persons. [58](#)

Unsurprisingly, across India, in rural and urban areas, over 42 per cent of Indians are opting for private doctors for outpatient treatment and 55 per cent are going to private hospitals for hospitalization even though the costs are as much of a killer as the disease for both poor and middle-class people. Consequently, over 79 per cent of rural Indians and 83 per cent of those in urban India have depleted their savings; one out of ten have borrowed to pay medical bills. This is because over 85 per cent of Indians in rural India and over 80 per cent of urban Indians have no insurance coverage. [59](#) Meanwhile, government expenditure on health is barely 1.8 per cent of GDP, which is worse than in the case of India's neighbours and even low-income countries.

India's total health expenditure, public and private, is over Rs 5.2 lakh crore. [60](#) The per capita cost of healthcare works out to Rs 4,116, of which Rs 2,494 is paid out of pocket by the individual. This means that Indians bear over 60 per cent of the cost of healthcare out of pocket from their daily household budgets and savings for a service the state is obliged to deliver. The burden of

out-of-pocket or uncovered healthcare costs in percentage terms is 7.75 per cent in South Africa, 11.09 per cent in the US, 15.12 per cent in the UK, 31 per cent in Singapore and 35 per cent in China. India is ranked 139 among 185 countries on the Global Health Expenditure Database. ⁶¹ World Bank data shows India does worse than Bhutan, Sri Lanka and even Chad, Eritrea and Niger in mitigating healthcare costs for individuals and families. ⁶²

The neglect of healthcare as a priority has acquired carcinogenic character and portents.

* * *

Dr Prathap Reddy's initiative, with a speciality hospital and then the backward and forward linkages, has had several follow in his wake. Apollo itself has seventy-one hospitals hosting 10,100 beds, over 200 diagnostic clinics, seventy-four dental clinics along with diabetes clinics, birthing and dialysis centres. On an average, Apollo admits over 4 lakh patients and treats 35 lakh outpatients for procedures ranging from check-ups to knee replacements to chemotherapy, marrow transplants and heart surgeries.

There are pan-India groups and there are those that straddle regions. Aravind Eye Care, set up by G. Venkataswamy, started as an eleven-bed operation with four doctors in 1976, now has thirteen hospitals, seventy-five primary eye care centres, a postgraduate institute, ophthalmic manufacturing unit, research institute and eye banks. Fortis, started in 2001 in Mohali, Punjab, runs thirty hospitals and over 400 diagnostic centres in India, Sri Lanka and Dubai. Narayana Hrudayalaya, a listed entity, owns twenty-three hospitals and seven heart centres. The CARE Group runs fourteen super-speciality hospitals in six cities in five states. The Manipal Group, which set up its first hospital in 1991, now has sixteen hospitals in south India, Malaysia and Nigeria. Max Healthcare began operations with one medical centre in south Delhi's Panchsheel Park and now operates fourteen hospitals.

There are other private chains and philanthropic hospitals too, enabling access and affordability in healthcare. Through a set of diverse models, the hospital chains are catering to varied groups of

people and offering a range of services. These include primary healthcare clinics run by Apollo, Manipal, Vita Life and short-stay surgery centres like Nova, Vasan Eye Care, R.G. Stone, and specialized antenatal, postnatal and paediatric care by LifeSpring Hospitals. Vatsalya Healthcare, set up by doctors Ashwin Naik and Veerendra Hiremath in Karnataka, originally focused on affordable outpatient and day-care centres in rural and semi-urban areas and now has seventy-five-bed hospitals in six towns.

Sankara Nethrayala, a philanthropic hospital set up by Dr S.S. Badrinath in 1978, was founded on a wish expressed by the late Chandrasekharendra Saraswati, then chief of the Kanchi Kamakotti Mutt. Sankara Nethrayala (which has since won many awards and earned accolades for Dr Badrinath) has centres across cities, sets up camps and serves over, 1,700 patients and carries out nearly 150 surgeries a day.

CARE Hospitals provides affordability through a pricing structure for low-income patients to access care. Glocal Healthcare, founded in 2010 by S.S. Azim in West Bengal, set out to provide high-quality care at low costs to the needy with a no-frills model. It offers primary and secondary care through a chain of five hospitals with around seventy-five to 100 beds each.

The expansion of the private sector has been about scale and customized access. It has also led to inspired innovations. Private and philanthropic players are setting the pace in frugal innovations. Mark Britnell in his book *In Search of the Perfect Health System* says, 'To work in Indian healthcare is truly to see some of the best and worst of what the world's systems have to offer.' Yet, 'If innovation is about invention, adoption and adaption then India can claim to have taken adoption and adaption to new levels in a short time. While India has profound challenges associated with the introduction of universal healthcare, its entrepreneurial flair has found ways to provide new services quickly.' ⁶³

Vijay Govindarajan ⁶⁴ from Dartmouth's Tuck School of Business and Ravi Ramamurti of the Centre for Emerging Markets at Northeastern University identified forty hospitals with innovative strategies and selected nine for an in-depth study, 'Delivering World-Class Health Care, Affordably'. ⁶⁵ The study included

interviews with founders and doctors to understand ‘how some Indian hospitals are able to provide world-class healthcare at ultra-low cost’. They opine, ‘The Indian hospitals we studied treat medical conditions that range from problems of the eye, heart, and kidney to maternity care, orthopaedics, and cancer. Their charges for most procedures are as much as 95% lower than those at US hospitals.’ [66](#)

A significant finding of the study is that lower costs are not at the expense of quality. Five of the seven cases studied by Govindarajan and Ramamurti are accredited by JCI, an independent non-profit that certifies the quality of more than 20,000 healthcare organizations in the US. Apollo Hyderabad recorded ‘equivalent or better outcomes’ than global standards for treatment complications linked with knee, coronary and prostate surgery. The thirty-day post-surgery mortality rate at Narayana Hrudayalaya is ‘below average rate recorded by a sample of 143 hospitals in Texas’. The five-year survival rate for breast cancer patients at HCG is comparable to US benchmarks. The survival rate of peritoneal dialysis patients at the Deccan Institute of Nephrology and Renal Transplant is comparable to corresponding figures for patients undergoing haemodialysis in the US. Aravind Eye Care’s records compare favourably with the best hospitals in the UK’s National Health Service. [67](#)

A series of studies, including KPMG’s ‘Necessity: The Mother of Innovation’, has looked at models of innovation to deliver quality at low costs. KPMG finds that ‘Indian providers have found that keeping costs lower through standardization allows them to rapidly expand access and generate adequate profit’. International scholars are touring facilities to understand instances of inspiring innovation. Devi Shetty has deployed Henry Ford’s management principles to healthcare, performing 600 operations a week with his team. Scale has enabled him to bring down the cost of an open-heart surgery to around 2 per cent of the \$100,000-plus that patients pay in the US. [68](#) Shetty has put up three other facilities next to the heart institution, including a 1,500-bed cancer hospital, a trauma care centre and an eye hospital. Critically, the hospitals share common facilities from

blood banks to labs to equipment, leveraging volume to trim costs down the value chain, including that of surgical gowns.

Govindarajan and Ramamurti say, 'Innovation at Indian hospitals result not from a grand design but from constant experimentation, adaptation – and necessity.' Cost efficiency enables expansion of market share as lower costs make access affordable to many of the lower income patients. This is done in a variety of ways. The CARE Group, for instance, has a manufacturing subsidiary to produce catheters and stents. Aravind has developed a lens for cataract operations made available at lower rates than alternatives from pure manufacturing outfits.

Cutting costs demands reengineering processes as well as maximization of specialist time. At Aravind, for instance, theatres have two surgical stations side by side, allowing the doctor to move to the next patient without much loss of time, thus enabling six surgeries in an hour. A major focus of Indian private sector hospitals has been to ensure doctors are not burdened with activities such as pre- and post-operative tasks, which are delegated to specially trained task specialists, leading to optimization of time and returns.

Not far from Dr Shetty's hospital in Bengaluru, General Electric (GE) is pioneering a design-cum-manufacturing technique that is reducing the cost of medical equipment by up to 90 per cent. The company's Mac 400 – a hand-held electrocardiogram (ECG) machine – is one example. The ECG costs around Rs 25,000 and provides tests for a fraction of the normal costs. GE has reduced the cost by getting rid of all the unnecessary bells and whistles that add to the cost of traditional ECG machines. The multiple buttons have been reduced to just four. The bulky printer has been replaced by a simple ticket machine. The whole thing is small enough to fit into a small backpack. GE is now taking these 'Indian' devices into the US, particularly to rural areas.

John Micklethwait, former editor of the *Economist* and co-author of *The Fourth Revolution: The Global Race to Reinvent the State*, says, 'If you are looking for the future of healthcare, then India's attempt to apply mass-production techniques to hospitals is part of the answer.' India's public healthcare system reeks of inefficiencies and inadequacies but that's also because its government is not

looking at what private healthcare is doing towards finding solutions. Says Micklethwait, ‘When it comes to rethinking healthcare, India is one of the most innovative places in the world.’

[69](#)

It is estimated that the hospital market has grown at over 20 per cent and is estimated to be around Rs 5 lakh crore. It is estimated that India has over 50,000 private hospitals, including charitable institutions, nursing homes and smaller clinics with over 4.2 lakh beds. Private healthcare institutions account for nearly 75 per cent of the hospitals and over 40 per cent of bed capacity. A KPMG study states: ‘The private sector has emerged a major force in India’s healthcare industry, accounting for 82 per cent of the net value of the healthcare market. The presence of private players is exponentially growing with their penetration of tier-II and tier-III cities and rural areas.’ [70](#)

Such facts, strictly speaking, should be for any government that abandons its citizens when it comes to healthcare a bitter pill to swallow.

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Innovation is not just in the brick-and-mortar segment – restricted to the setting up of super-speciality hospitals. India is at the cusp of what could be called an e-care revolution. Think Flipkart/Amazon in retailing, Ola/Uber in urban commuting, Byju’s/UrbanPro in e-learning. Startuppreneurs, or start-up entrepreneurs if you please, are leveraging technology and the rising use of smartphones and consumption of data to bring home to people customized solutions for their healthcare needs.

A unique set of circumstances is propelling the growth of the segment. First, India has the worst doctor to population ratio. Second, while 70 per cent of Indians live in semi-urban and rural areas, 80 per cent of the physical and human infrastructure of healthcare is located in urban metros. Third, the skewed doctor to population ratio gets worse because not every doctor’s time is fully utilized.

Startuppreneurs are setting up platforms at the intersection of the geography of demand and the economics of supply – the three-dimensional solution makes available medical care when it is needed, where it is needed and at a price point that bridges the gap between access and affordability. These platforms offer convenience, even anonymity for patients seeking advice for mental or sexual issues, and affordability as the need be. They can either be a subscriber of a per-member-per-month fee or dial without the membership to consult for a fee. The consultation can be on video or phone and payment is through online payment channels. Google ‘online doctor consultation India’ and it throws up over seventeen million responses. For instance, there is icliniq.com, which describes itself as the ‘virtual hospital’ with 3,500 listed doctors across eighty specialities via online chat, phone calls or video chat.

Amit Munjal was holidaying in Hawaii when he had an ankle injury. Not knowing any physician there, he asked a friend who guided him to an app called Doctor on Demand, which provided him access to doctors via video. The doctor asked some questions, asked him to move his ankle in particular ways and then prescribed medicines. Munjal was fit in two days. The convenience of the experience stayed with him. In 2015, once he was back in India, he examined ‘many ideas but the thought of democratizing access to healthcare appealed the most’. He teamed up with co-founder Prashant Jain, a doctor, to set up Doctor Insta, with its calling card: ‘See a doctor instantly, anytime, anywhere’.

The contrast is vivid. The government struggles to offer even the most basic of services to those who come to their door. Meanwhile, start-ups are offering a range of diagnostic, therapeutic and palliative services, ranging from path tests to physiotherapy sessions to pre- and post-operative care and even professional care for the aged. Pathology and histopathology labs offer to send home technicians to collect samples for a range of tests and at a discount. Online aggregators are providing the ailing even with home-care physiotherapy. A simple search for home-care physiotherapy on Practo, an online aggregator, throws up 525 responses for Mumbai, 455 in Delhi and 310 for Pune. Indian Home Healthcare, a web-based service provider, offers the services of professionals, from

nurses to therapists, and equipment for orthopaedic, cancer, post-surgical and elder care at home in Bengaluru, Chennai, Thiruvananthapuram and Mumbai.

The exponential growth in demand for healthcare has naturally attracted investment in hospitals and online healthcare services – both foreign direct investment as well as private equity. Indeed, PricewaterhouseCoopers (PwC) reported in 2018 that since January 2010, more than 110 private equity and venture capital investors have invested in the healthcare delivery space. [71](#) And gross value generation by the sector, including hospital services, medical devices, clinical studies, outsourcing, telemedicine, medical tourism, health insurance and medical equipment, could rise to \$372 billion by 2022. [72](#)

* * *

One would imagine that the government – Centre or state – would want to understand how private players can deliver healthcare and instruct its crafters of public policy to present ways of aligning, as also replicating, on different scales. That has not been the case.

In 2018, the Global Burden of Disease and Healthcare Access Quality Index report published by *Lancet* ranked India 145th out of 195 countries, trailing Nigeria, Myanmar and Micronesia. Each of the members of its BRICS peer group was ranked ahead – China at forty-eight, Russia at fifty-eight, Brazil at ninety-six and South Africa at 127. Countries with large populations, such as China, and countries with smaller economies and per capita incomes, like Sri Lanka, Bhutan and Bangladesh, do much better in quality of healthcare access. Even more populous and non-democratic regimes have done better than India. The explanation rests in that cusp of commitment and conceptualization. [73](#)

The best healthcare system is one that prevents people from going to hospitals. This needs knowledge-driven public policy. Healthcare is not just about what the health ministry does but what is lacking in public policy across a spectrum of services – in the delivery of potable water, in sanitation, in urbanization, in the management of waste and pollution, which lead to infectious diseases, and the

quality of air and living, which cause a host of non-communicable ones.

India tops the list of countries for the number of under-five children claimed by pneumonia and diarrhoea. Just these two diseases alone claim over 2.6 lakh lives every year, or over 715 under-five lives a day. ⁷⁴ Life expectancy at birth is better and higher in Nicaragua and Guatemala than in India. ⁷⁵ The chances of a woman surviving childbirth are higher in Cambodia, Sao Tome Principe and Suriname than in India, where maternal mortality is 174 per 1,00,000 childbirths. ⁷⁶

Every year, thousands are afflicted by vector-borne diseases – infection transmitted from one living form to another, to humans and other animals by blood-feeding anthropoids such as mosquitoes, ticks and fleas. A 2019 *Lancet* study ranked India fourth, after Nigeria, Democratic Republic of Congo and Mozambique for incidence of malaria – ten million cases in 2017. ⁷⁷ Between 2014 and 2018, over 5.5 lakh cases of dengue and 2.33 lakh cases of chikungunya were reported in India. Indeed, dengue and chikungunya are endemic in India. Acute encephalitis syndrome claims over a thousand lives every year in India. ⁷⁸ The causes are not unknown.

Living conditions determine prevention or perpetuation of epidemics and diseases. Government offices use bottled/packageged drinking water; they know how safe (or unsafe) tap water is to their health. Barely a third of India's solid waste is treated. As a result, over 350 stretches of rivers and a sixth of the groundwater zones numbering over a thousand blocks have been found to be contaminated. ⁷⁹ Unsurprisingly, more than a fifth of the communicable diseases are caused by unsafe drinking water, claiming 1,600 lives every day. That's sixty-six people falling sick because of unsafe water and then dying painful deaths – every hour. There is the suffering and death and then there is the cost of morbidity reflected in data on disability.

Every winter, there is high-decibel public outrage in Parliament as the national capital and much of north India are enveloped in deadly smog. But outrage hasn't impacted policy. Successive governments

over two decades have taken refuge in the ghetto of gibberish: ‘There is no conclusive data available in the country to establish direct correlation of death/disease exclusively due to air pollution.’

⁸⁰ The denial was demolished by refutation. Dr Maria Neira, Director, WHO, took to Twitter with a blunt message: ‘No study shows Indians immune from air pollution.’ ⁸¹ The fact is successive studies, in which government institutions have collaborated, have proven that poor air quality claims over 1.24 million lives – that is roughly 3,397 lives every day or 141 lives every hour. ⁸² The reality of pollution is validated by the fact that even the Prime Minister’s Office procures air purifiers. ⁸³

It is not lack of knowledge that India’s healthcare system suffers from but the absence of urgency and priority. The inadequacy of India’s healthcare system is afflicted by dystopian dysfunction. More often than not, electoral expediency overwhelms policy perspective and that explains the constant hunt for quick fixes. The problem with flyover solutions is that they do address the consequences but not the cause itself. In medicine as in policy, it is imperative to diagnose the cause and not merely the symptoms.

In his seminal tome *The Great Escape: Health, Wealth, and the Origins of Inequality*, economics Nobel laureate Angus Deaton says, ‘There are ways of ensuring good health at low incomes and ways of spending large sums of money to no purpose.’ ⁸⁴

Piety of intent is never enough.

3

EDUCATION

Pay Per R

The state of Uttar Pradesh is no ordinary province. It spreads across 2.43 lakh sq km with over 230 million or twenty-three crore residents. As India's largest and most populous state, it's as large as Uganda and as populous as Brazil.

In Lucknow, its capital, on 31 January 2018, the core team of this state's government is in attention. Chief Minister Yogi Adityanath and Deputy Chief Minister Dinesh Sharma are scheduled to video conference with district authorities to review security arrangements across fifty districts. This includes installation of CCTVs, positioning of videographers, availability of constables and officers of the UP Police and deployment of the UP Police Special Task Force (STF). The preparations have been a month long.

The series of meetings, the use of CCTVs, the involvement of district magistrates and officials suggest that the state government is preparing for a high-security, high-voltage event. The preparations are in fact being made to combat mass copying during the annual board exams for Classes X and XII.

Men and guns are put in place across 25,896 schools in two shifts, from 7 a.m. to 11 a.m. and 2 p.m. to 6 p.m. Fifty of the seventy-five districts are identified as 'sensitive' and armed commandos of the STF are posted at 8,057 examination centres.

Even by India's population standards, these examination numbers boggle the mind. A total of 67,29,540 students – that's 6.7 million, roughly the population of Bulgaria – are registered to appear for the

exams; 37,12,508 students for Class X and 30,17,032 for Class XII. On exam day, 10,44,619 students – approximately the population of Fiji – drop out; 6.24 lakh from Class X and over 4.2 lakh from Class XII. ¹ The state government takes credit for this large-scale dropout as the impact of their crackdown on mass cheating. Embedded in that claim is the harsh truth that students see getting a proxy to appear for them, or cheating, or both, as the only way of their passing exams.

Despite the measures, mass copying is reported from Agra, Mainpuri, Chitrakoot, Allahabad, Kanpur, Barabanki, Bareilly, Bahraich, Etawah, Ghazipur, Ballia and a dozen other ‘sensitive’ districts. In Atrauly village in Aligarh district, sixty-two persons were caught writing the answers, not in the exam hall, but at the house of a local college official. Among them is a seventy-year-old man appearing for his grandson’s Class XII exam.

In Maharajganj in Chandauli, a shopkeeper is found hawking photocopies of the science and physics papers of Classes X and XII. The exams are cancelled. ² In Naini, Allahabad district, the STF arrests students taking down answers from a local teacher. Turns out, teachers and the principal of a school were charging between Rs 2,000 and Rs 3,000 per student to let them cheat. ³

A quarter of a century earlier, another UP government led by Kalyan Singh had also tried to crack down on mass copying. Rajnath Singh, then education minister in UP and currently India’s defence minister, had promulgated via an ordinance the Anti-Copying Act, 1992. That year, the passing percentage dipped to 14 per cent; barely one of seven students who appeared for the Class X exam passed.

The opposition of that time – Samajwadi Party led by Mulayam Singh Yadav and Bahujan Samaj Party led by Mayawati – deployed it as an election issue, with Mulayam promising to abolish the anti-copying law. In December 1993, the BJP lost the polls and the SP–BSP alliance came to power. When Mulayam was sworn in as chief minister, one of his first acts was to scrap the Anti-Copying Act. The pass percentage in the following years went up to over 85 per cent. ⁴

Ironically, both Mayawati and Mulayam, before they embarked on their political careers, had been teachers. The BJP made mass copying an election issue in 2017 and upon coming to power in the state, initiated this crackdown on mass copying.

It is not that copying is an affliction constrained by state boundaries. Parents in Bihar have been photographed climbing school walls and clambering over windowsills to help their children cheat. On 22 February 2018, the Bihar School Examination Board barred 17.60 lakh students from wearing shoes and socks while appearing for exams so that paper slips couldn't be concealed. The opposition called it mental torture. ⁵ That notwithstanding, Bihar Police nabbed over 1,000 students and twenty-five fake examiners. In Telangana, the government in March felt obliged to announce that students found copying in Class X or XII exams could face up to seven years in jail and fines up to Rs 1 lakh. ⁶ Across India, over a dozen states have specially crafted laws to crack down on copying, cheating and malpractices in exams. ⁷ Unsurprisingly, Uttar Pradesh and Bihar are at the bottom of the ranking in the Niti Aayog School Education Quality Index of 2019. ⁸

The phenomenon of mass copying symbolizes everything that is not right and everything that has gone wrong. It represents the broken education system and what is often said about India – that it has an examination system and not an education system.

* * *

Article 45, Constitution of India, says, 'The State shall endeavour to provide, within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of fourteen years.'

No promise could possibly be more explicit.

The power of education and its value have never been in doubt. India, after all, has been home to universities such as Taxila and Nalanda in the olden days. The grid on which India's education system rested – the gurukuls, viharas, maqtabas and madrasas – broke down in the 1700s when the British set up their empire.

The Charter Act, 1793, of the East India Company was renewed every twenty years in the British parliament. In 1813, when it came up for renewal, British MPs fostered the case of missionaries and forced the East India Company to organize education in the colony.

Section 43 of the Charter Act said, 'It shall be lawful for the Governor General-in-Council to direct that out of any surplus which may remain of the rents, revenues, and profits arising from the said territorial acquisition, after framing the expenses of the military, civil and commercial establishment and paying the interest of the debt, in manner hereinafter provided, a sum of not less than one lakh of rupees in each year shall be set apart and applied to the revival and improvement of literature and the encouragement of the learned natives of India and for introduction and promotion of a knowledge of the science among the inhabitants of the British territories in India.'⁹

This was followed by the Macaulay Minute of 1835, since then a go-to reference point in debates on education between Orientalists and Anglicists. Committees underlined the need for universalizing education. The Wood's Despatch by Charles Wood in 1854, the Hunter Commission in 1902, the Philip Hartog Committee in 1929, the Sapru Committee in 1934 and the Abott-Wood Committee in 1936 made recommendations ranging from teaching English to vocational courses to upgrading universities and universalizing education.

The British approach was utilitarian and what the Empire needed – an assembly line of handy hands. Mahatma Gandhi spoke on exactly this at the Chatham House Meeting in London on 20 October 1931: 'I say without fear of my figures being challenged successfully, that today India is more illiterate than it was fifty or a hundred years ago, and so is Burma, because the British administrators, when they came to India, instead of taking hold of things as they were, began to root them out. They scratched the soil and began to look at the root, and left the root like that, and the beautiful tree perished. The village schools were not good enough for the British administrator, so he came out with his programme.'

The Mahatma continued pursuing what the best model for India could be. He wrote in *Harijan*, 'Education should be so revolutionized as to answer the wants of the poorest villager, instead of answering those of an imperial exploiter.'

Following the passage of the Government of India Act in 1935, the devolution of autonomy saw Congress in power in seven provinces. At the All India Education Conference at Wardha, it was resolved that free and compulsory education would be provided from ages six to fourteen. A committee under Dr Zakir Husain designed the fundamental principles for the child's all-round development of body, mind and spirit. But the Wardha Scheme could not be implemented following the launch of the Quit India movement and World War II.

After the war, the Constituent Assembly was tasked with writing the Constitution. The imperative of education came up in the debate at the very first session of the Constituent Assembly. On 17 December 1946, the Constituent Assembly discussed the Preamble. It stated the precept of 'equality of status and opportunity' unequivocally. To emphasize the gravitas of the promise, Minoo Masani said, 'Equality of opportunity, sir, presupposes equal facilities in education and in the development of the talent that is latent in each one of us. [. . .] Today, among our masses a fund of latent talent exists, which has no chance to come out and contribute to our national good. Equality of opportunity certainly assumes that every child in this country, every boy and girl, will get an equal opportunity to develop those faculties which he or she possesses in order to contribute to the common good.' [11](#)

The first Census of 1951 revealed the abysmal state of literacy. Only 18 per cent of Indians knew how to read and write; 73 per cent men and 91 per cent of women were illiterate. In 1961, only 28 per cent of Indians were literate; 60 per cent of males and 85 per cent of women were illiterate. By 1960, it became very clear that the explicit guarantee in the Constitution under Article 45 had begun flailing.

Not that there was a dearth of expert committees mooting ways to implement the constitutional promise – the Radhakrishnan Commission (1948-49), Lakshmanaswami Mudaliar Secondary

Education Commission (1954), K.L. Shrimali Committee on Higher Education for Rural Areas (1954), Study Team on General Education (1955) led by S. Bhagvantam, Assessment Committee on Basic Education (1956) led by G. Ramachandran, P.D. Shukla's Committee for the Integration of Post-Basic and Multipurpose Schools (1957), Committee on Rural Education (1957), National Committee on Women's Education (1958) led by Durgabai Deshmukh and the Committee for Coordination and Integration of Schemes Operating in the Field of Physical Education, Recreation, and Youth Welfare (1959) led by Hriday Nath Kunzru. Another committee was set up in 1963 to look into the causes for lack of public support, particularly in rural areas, for girls' education and to enlist public cooperation; there was also a committee of MPs on higher education in 1963.

When the state of education came up for discussion and debate in Parliament in 1964, the dismay was best expressed by then Education Minister M.C. Chagla: 'Our Constitution fathers did not intend that we set up hovels, put students there, give untrained teachers, give them bad textbooks, no playgrounds and say, we have complied with Article 45 and the primary education is expanding [. . .] What they meant was that real education should be given to our children.'

The anguish of Chagla and the angst among parents resulted in the government setting up a seventeen-member education commission headed by Daulat Singh Kothari. The commission created twelve task forces, seven working groups and twenty-one sub-groups. The committee inducted international experts in the field of education, including members from the United Nations Educational, Scientific and Cultural Organization (UNESCO), Commonwealth Education Unit, University of California, University of London, Waseda University in Tokyo and Ministry of Education, USSR.

Kothari also sought the expertise of twenty global consultants – from Ivy League institutions like University of Harvard and Columbia University to London School of Economics, University of Manchester, University of Sweden and Paris-based International Institute of Education Planning. The groups looked at four main

themes: productivity, modernization, social and national integration, and inculcation of values. The commission submitted its 530-page (plus 133 pages in appendix) report on 29 June 1966.

A decade after the Kothari Commission, the central government moved education from the state list to the concurrent list. Good ideas, though, came from the states. It was Tamil Nadu Chief Minister M.G. Ramachandran who introduced midday meals for all children, which was adopted by many states and universalized following a Supreme Court order (see my book *Accidental India* on how midday meals evolved out of a crisis and spurred enrolment). Two decades after the Kothari Commission, the Rajiv Gandhi regime drafted the National Education Policy of 1986 to modernize education and called it ‘Operation Blackboard’. This was followed in 1992 by the Yashpal Committee. Every decade saw a new committee.

In 2002, the Atal Bihari Vajpayee government amended the Constitution (Eighty-sixth Amendment) Act and inserted Article 21-A to provide free and compulsory education of all children in the age group of six to fourteen years as a fundamental right. It also kick-started the Sarva Shiksha Abhiyan paid for by a cess. The Congress-led United Progressive Alliance then enacted the Right of Children to Free and Compulsory Education (RTE) Act, 2009. [12](#)

The RTE Act of 2009 laid down multiple objectives in a single piece of legislation – the right to free and compulsory education, the minimum distance for access to schooling, the obligation of the government to offer it for free, standards on pupil–teacher ratio for each school unlike the law of average for the state that had prevailed earlier, training of teachers, prohibition on deployment of teachers for non-educational work and prohibition on screening of children for admission, capitation fee, etc. The RTE Act also laid down parameters on physical infrastructure.

The RTE Act was, in many ways, a redraft of the 1944 Sargent Committee Report on Education. It had flagged most of the issues necessary for both enrolment and quality of education – distance to school, size of the classroom, a need for open spaces, size of class and pupil–teacher ratio, need for pre-primary classes, bifurcation of segments, age of pupil during admission (now called age-

appropriate admission), salary of teachers and vocational courses, among others. That India had to legislate a justiciable law in 2009 is a testimonial of progress or the lack of it.

Given the systemic issues and the lack of capacity, it was clear that the government would have to piggy-back on the private sector. The RTE Act outsourced capacity, an unintended voucher scheme, to the private sector. A decade later, the promise of Section 12(1)(c) of the RTE Act – legislated to enable equality of opportunity and a right to schooling in private institutions paid for by the government – is yet to be realized, thanks to the disputes between the Centre and the states on formulas regarding who will pay how much and delays in reimbursements. Fact is, barely a third of the seats have been filled. Between 2010 and 2015, just over a fourth of the two million seats under the RTE quota in private schools were filled. [13](#)

Timeline is critical for comprehension of the chasm between intent and execution of intention. One example is the parallel history of India and Indonesia. India and Indonesia had similar levels of literacy of sub 20 per cent in 1950. At that time, India had Jawaharlal Nehru and Indonesia had Sukarno, born Kusno Sosrodihardjo. In 1966, Indira Gandhi assumed power in Delhi and Suharto wrested charge in Jakarta. Both regimes could be described as decisive, if not autocratic. India's literacy rate in 1970 was under 35 per cent and that of Indonesia was similar. By 1990, Indonesia boasted of 81 per cent literacy while India was stuck at 52 per cent.

The scale of India's population is cited as a reason for its many failings. China would have faced the issue too, but between 1950 and 2000, China ramped up literacy from around 30 per cent to over 95 per cent. India in 2019, in terms of literacy, is where China was in 1990. Adult literacy in Indonesia is at 95 per cent while a fourth of India's populace is classified as not literate. In 2018, of the 750 million persons in the world who are not literate, 37 per cent or over 287 million resided in India. This difference in performance is explained by the difference in political accountability and the committing of human and financial resources.

The Organization for Economic Cooperation and Development evaluates global education systems through the Programme for International Student Assessment (PISA) tests. In 2012, over half a

million students participated for reading and understanding of science and mathematical abilities. Chinese students from Shanghai topped the tests in reading, science and mathematics. India came second from the bottom, just above Kyrgyzstan. [14](#)

India pulled out of PISA tests the following year.

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It takes a visiting dignitary to call a crisis by its name. Speaking at the 2016 Transforming India Lecture Series, then Deputy Prime Minister of Singapore Tharman Shanmugaratnam told a packed audience, which included Indian Prime Minister Narendra Modi, ‘I have to say, and I would like to repeat, I say this as a friend. Schools are the biggest crisis in India today, and have been for a long time. Schools are the biggest gap between India and East Asia. And it is a situation that cannot be justified.’ [15](#)

It is true that India has succeeded in boosting enrolment and reducing the number of children out of school. But it’s equally true that quantity is not accompanied by the quality of education. The very visible deterioration in the quality of education is threatening to convert what is envisaged as a demographic dividend into a disaster. The spectre is manifest in the numbers released by government reports – the data from non-governmental surveys.

The fundamental principle about public policy is that what gets measured gets done. In India, it doesn’t quite play out. The Government of India collects data on school education. The District Information System of Education (DISE) provides this across 121 tables – data on 1.45 million primary and upper-primary schools and over 2.5 lakh secondary and higher-secondary schools. However, as the World Bank’s World Development Report, 2018, commented, ‘Of the 980 data points reported, none covers student learning,’ and that this ‘omission can make it difficult to track interventions to improve learning’. [16](#)

The government’s National Achievement Survey (NAS) 2015 – which covered 2.2 million students from Classes III, V and VIII across 1.10 lakh schools – says this: ‘Overall Class V students in thirty-four states/union territories were able to correctly answer 45

per cent of reading comprehension items, 46 per cent of mathematics items and 50 per cent environmental studies'. What doesn't get said is that more than half of the students could not spell.

The NAS, comprehensive as it may be in its width of coverage, does not convey the depth of failure. An annual dose of reality about India's state of education comes from Pratham's Annual Status of Education Report (ASER, which means 'impact' in Hindi), which focuses on the attainment of education of children of ages between five and sixteen. ¹⁸ The 2016 survey included 5.6 lakh children from 3.5 lakh households across 17,473 villages in 589 districts. The findings of the survey are mind-numbing.

Nearly three quarters of students in Class III could not read Class II texts and just over 27 per cent could do a two-digit subtraction. Less than half the children in Class V could read Class II texts and fared far worse in arithmetic. Barely 21 per cent could do division, 23.3 could do subtraction but no division, 32 per cent knew numbers but couldn't do subtraction and a shocking 18.7 per cent knew numbers till nine but not till ninety-nine. What should send shock waves is the stark observation by Madhav Chavan in the 2014 Pratham report: 'A hundred million children have gone through the schools in the last decade without basic reading and math skills.'

The 2017 ASER report looked at the level of preparedness of those completing eight years of schooling and those aged between fourteen and eighteen in terms of activity, ability, awareness and aspirations. A fourth of them could not read basic text fluently in their own language and more than half struggled with the division of a three-digit number by a single digit. Of those surveyed, one in four could not count money, just over half could add weights correctly. While 83 per cent could tell the time in hours, only 60 per cent got the minutes right. When showed the map of India, while 79 per cent could say the name of their state, only 42 per cent could point it out on the map.

The 2018 ASER report looked at reading and math abilities of students over a ten-year period, between 2008 and 2018. It's as much about the inadequacy of teaching as it is about the learning. For instance, in 2008, the survey found that 38.8 per cent of Class III students could do subtraction. In 2018, only 28.1 per cent could.

The decline is similar among higher age groups. Among Class V students, as against 37 per cent of students in 2008, only 27.8 per cent of them could do a simple exercise in division. The ability of Class VIII students to read Class II texts went from 84.8 per cent to 72.8 per cent. [19](#)

The disparity in teaching and learning across states is, in itself, shocking. In Rajasthan, only 8.1 per cent of Class III students attending government schools could subtract compared with 44.7 per cent in Kerala. Barely 12.3 per cent of students in Class III in Uttar Pradesh could read Class II texts compared to 47.4 per cent in Himachal Pradesh. Similarly, 71 per cent of Class VIII students in Mizoram could do simple division compared to 28.7 in West Bengal. The difference between government and privately managed primary schools is also to be noted. Only one in five, or 20.9 per cent, of students in Class V could read Class II texts compared to 39.8 per cent in private schools. Similarly, 54.2 per cent of students in Class VIII in private schools could do division compared to 44.1 in government schools. [20](#)

Government schools need not be bad, and Kendriya Vidyalayas prove the point (Disclosure: I have been a student of one). Kendriya Vidyalayas are the jewels in the troubled crown of government schools. Started in 1963 to enable children of central government employees and members of armed forces posted in remote locations to access education, the over 1,200 KVs, as they are known, are under the Central Board of Secondary Education. As government schools, they represent an idea of what could have been.

The cause of these consequences is located in the casual approach to causality – the systemic fault lines of authority and accountability. Learning outcomes depend on teaching and the presence of teachers. Teacher absenteeism in India generates its own library of researched literature. [21](#) The reasons range from absence of systemic oversight to absence of incentives, from deployment in non-teaching tasks to unionization. To top it, there is the issue of government teachers being made to assist in the conducting of national and state elections. The teachers are demotivated and disheartened.

To fully grasp the gap in requirement and availability and the scale of inadequacy, there is the raw data. India has around eleven lakh government schools – schools managed by local bodies, states and the Centre. The sanctioned strength of teachers for these schools, for primary and secondary divisions, is 57.89 lakh. In July 2019, Rajya Sabha MP Vishambhar Prasad Nishad asked a question in Parliament about vacancies. In its reply, the government said that ‘10.08 lakh teacher posts were vacant’. That’s a fifth or a million-plus of the 5.7 million posts that are vacant. ²² Bihar and Uttar Pradesh, the most populous states with most number of students in schools, have one in three posts vacant and account for nearly half the vacancies.

There is the void left by vacancies and then there is the absenteeism of teachers. In the academic year of 2003-04, surveyors made unannounced visits to over 3,700 schools in twenty Indian states. One in four, or 25 per cent of the teachers, were absent and absenteeism rates varied from 15 per cent in Maharashtra to 42 per cent in Jharkhand – the poorer the state, the higher the absenteeism. ²³

In 2016, Karthik Muralidharan, Jishnu Das, Alaka Holla and Aakash Mohpal did a study titled ‘Fiscal Cost of Weak Governance: Evidence from Teacher Absence in India’. Using a nationally representative dataset of schools across 1,297 villages in the country, they found 23.6 per cent of teacher absenteeism. They estimated the salary cost of such rampant teacher absenteeism as around \$1.5 billion. That is roughly Rs 10,000 crore per year, or around 60 per cent of the special education tax collected (for 2010) by the government and from taxpayers for the Sarva Shiksha Abhiyan.

In December 2017, former minister and Member of Parliament Dinesh Trivedi asked the government if it knew about the appalling level of teacher absenteeism in schools. ²⁴ The Human Resource Development (HRD) ministry replied that it had conducted its own studies which showed that overall teacher attendance had improved from 81.7 per cent to 84.3 per cent at the primary level and from 80.5 per cent to 81.3 per cent at the upper-primary level. The government added that in its 2013 study, it looked at the reasons for

absenteeism: illness, distance from residence, lack of transport, engagement in other economic activities including farming and tuition and participation in political events.

Now, arrange the data to fully appreciate the gap caused by individual and institutional delinquency, by absenteeism and vacant posts. India's government-run elementary schools require 51.03 lakh teachers. Of this, nine lakh posts are vacant. Available teachers are 42.03 lakh. Of these, roughly a fourth or ten lakh are prone to absenteeism for any of the reasons above, ranging from illness to election duty. Effectively, while fifty-one lakh teachers are needed, only thirty-two lakh are present, leaving a gap of 40 per cent between need and availability in the elementary schools, which cater to a child in its most crucial, formative years.

It is not that the government doesn't know its own data. In March 2018, the Parliamentary Standing Committee for the HRD ministry noted that the pupil-teacher ratio in 33.9 per cent of schools was 'well beyond acceptable standards and the Committee would like the Department to devise a suitable strategy for these schools to ensure that these figures come down as early as possible'. [25](#)

Worse is the state of students that have just one teacher for their entire school. Of the 10.94 lakh government schools, a whopping 1,08,017 schools have just one teacher. Over 20 per cent of schools in Rajasthan and Jharkhand, over 10 per cent in Madhya Pradesh and 8 per cent in Uttar Pradesh are single-teacher schools. [26](#) There are also over 53,533 single-classroom schools (which may or may not be single-teacher schools). [27](#) About half of government and government-aided primary schools are without a principal/headmaster/headmistress.

Believe it or not, it used to be worse. Imagine schools with nothing at all to represent teaching or schooling. The 'Elementary Education in India: Analytical Report (2003)' has a data chart which starts with the number zero. In 2002-03, the Government of India ran schools without anyone in position of teaching/running a school: 1.7 per cent of the 6,01,866 primary schools, or 6,018 schools. There have also been schools with absolutely no classrooms. The DISE report has zero classrooms for over 11 per cent of primary

schools. The report reveals that ‘about 38,158 (6.34 per cent) primary schools are without building’.

Matters have improved for DISE since in its 2015-16 report it states proudly, ‘A significant achievement seen in most of the new schools that have opened in the recent past is the presence of a school building.’ Physical infrastructure, despite the massive spending, lags behind even the government’s own norms. [28](#)

In 2018, the Union Budget proclaimed, ‘Technology will be the biggest driver in improving the quality of education. We propose to increase the digital intensity in education and move gradually from “black board” to “digital board”.’ The government added, ‘Technology will also be used to upgrade the skills of teachers through the recently launched digital portal “DIKSHA”.’ [29](#)

Just seven days after the grand announcement, the presumption of access to electricity and computers got a shake-down. BJP MP Prabhat Jha asked the government what percentage of schools had electricity and access to computers. Upendra Kushwaha, minister of state for HRD, informed Parliament of the reality: ‘At the all India level, 56.40 per cent had electricity.’ Seven decades after Independence, over 43.6 per cent or four lakh schools have no access to electricity. The minister acknowledged also that ‘only 17.71 per cent had computer[s] in government schools’, [30](#) and as DISE 2015-16 reveals, only half or ‘54.07 per cent are functional’. [31](#)

It is no secret that every aspect of schooling from teachers to classrooms influences enrolment, attendance, retention and learning. What Minoo Masani, member of the Constituent Assembly, said in his book *We Indians* holds just as true today: ‘Even of the small number of children who go to primary schools, many drop out of school and lose what they learned. Thus, out of 100 children enrolled in Class I in 1971-72, only thirty-seven reached Class V four years later and only about twenty-three reached Class VIII by 1978-79.’

A premature and abrupt end of schooling continues to be an issue. An independent survey commissioned by the HRD ministry found 60.64 lakh children aged between six and thirteen out of school. [32](#)

Given the context of inadequacy and insufficiency, it is scarcely surprising and yet shocking that of the ten children who enrol in Class I, only six reach Class VIII and over half of the enrolled students drop out by the time they reach Class X.

On 31 October 2015, yet another committee was appointed, headed by T.S.R. Subramaniam. ³³ On 27 May 2016, the Committee for Evolution of a National Education Policy submitted its report to the HRD ministry. In its preamble is this one-paragraph summation of the state of education in India: ‘It will not be an exaggeration to say that our education system is in disarray. Various evaluation studies show a decline in learning levels among school students. Teacher vacancies and teacher absenteeism continue to plague government schools in which dropout rates are still high. There is widespread corruption in appointments and transfers of teachers and also in according approval and recognition to educational institutions. Donations have to be paid for several kinds of admissions and are particularly rampant in engineering and medical education. Examination papers are leaked, copying is widespread and mark sheets are often rigged.’

This is about as grim as it can get.

* * *

Come school admission season, the Municipal Commissioner of Mumbai is plagued by phone calls, at home, at office and on the mobile. ‘The calls,’ says Ajoy Mehta, former municipal commissioner of Mumbai, ‘are from friends, batch mates, seniors and even colleagues. They call for help in securing admission in schools for a child or a grandchild.’

The commissioner is an influential person in a powerful post. The Municipal Corporation of Greater Mumbai (MCGM) is India’s richest local government with a budget of Rs 27,258 crore. It runs over 1,200 schools with 3.4 lakh students across the city and the city corporation spends over Rs 2,400 crore per year of taxpayer money on them. The schools have eight languages as mediums of instruction.

The calls, though, are not for admissions in municipal schools but private ones. Such is the migration from municipal to private schools that between 2013 and 2017 the BMC has closed down ninety-nine schools. ³⁴ It isn't about the money – in 2017-18, the budget allocation was over Rs 52,000 per student. It isn't about lack of seats either – the MCGM is well within the students-per-classroom norm. The fact stands that every year, more and more parents are pulling their children out of municipal schools.

Praja Foundation estimates that annual enrolment for Class I has dropped from 63,392 students in 2008-09 to 32,218 students in 2016-17 – that's over 49 per cent. ³⁵ This exodus is visible in seven of the eight languages, the exception being English. To address this aspiration for upward mobility that their children attend 'English medium school', Mehta and his team had focused on a ramp-up of seats in the MCGM's English schools and introduced 'semi-English-medium' schools, which was a challenge in itself since the political narrative pushes for the 'mother tongue' as the medium of instruction. The MCGM also designed a new 'international curriculum' as a pilot in twenty-three schools. ³⁶

Not too far away from Mumbai is Pune, once described as the 'Oxford of the East'. The Government of Maharashtra ordered the closure of 1,314 schools run by zilla parishads due to reduced enrolment caused by poor education standards. ³⁷ Curiously, some of these are listed as A-grade schools in ads released by the state government under the National Programme on School Standards and Evaluation. ³⁸

The exodus from government schools is on everywhere in the country. During 2010-11 and 2015-16, the numbers of schools run by local bodies, which would be mostly urban and municipal bodies, went down from 2,46,996 to 2,28,470. In the national capital, Delhi, between 2013-14 and 2017-18, the number of students in municipal schools dropped from 8.69 lakh to 7.5 lakh, and in schools run by the state government of Delhi, from 15.9 lakh to 14.5 lakh. ³⁹ Gross enrolment in Class I in municipal schools of Delhi slid by over 69,200 students between 2010 and 2017.

The emptying of government schools and the migration of students to private schools is a scandal that symbolizes the failure of the state. In 2005-06, India's schools had 16.82 crore or 168.2 million students. Of these, 12.56 crore students were in government schools and 4.25 crore in private schools. Ten years later, in 2015-16, India's schools had 19.67 crore students, of whom 11.69 crore were in government schools and 7.46 crore in private schools. In just five years, between 2011 and 2016, over 1.3 crore or thirteen million students exited government schools. [40](#)

The shift to private schools is accelerating even as the government allocates more and more money. The annual spend on education, between the Centre and the states, shot up from Rs 67,000 crore in 2000-01 to Rs 4.41 lakh crore in 2017-18. Indeed, between 2005 and 2018, the period that witnessed an acceleration of exit, the governments cumulatively spent over Rs 34.07 lakh crore. [41](#)

Between 2000 and 2018, the government collected over Rs 1.92 lakh crore as education cess from taxpayers for new programmes and schemes to implement the promise of the RTE. [42](#) Over the years, per pupil or per student cost to governments spiralled across states, from Rs 29,641 to Rs 61,622 in Delhi, and it was at Rs 52,142 in Mumbai. Yet, the number of students in government schools has been sliding.

Data over the past decade provides its own damnation. In 2007-08, India's schools had 18.50 crore students on their rolls, of whom 13.33 crore were in government schools and 5.10 crore in private schools. By 2015-16, even as the number of students went up, the number of students in government schools dipped by 1.67 crore and the number of students in private schools went up by 2.35 crore. [43](#)

The 2018 ASER report found 'nationally four of ten government primary schools visited had less than sixty students'. The number of schools with less than sixty students has increased every year over the last decade. It was 26.1 per cent in 2009, 30 per cent in 2011, 33.1 per cent in 2013, 39.8 per cent in 2016 and stands at 43.3 per cent as of 2018. The national average doesn't quite tell the embedded tragedy spelt out by data on the poor states, where

parents clearly in need of state assistance are shifting their children. The ratio of 'small schools' has gone up in Madhya Pradesh from 18.1 per cent to 49.6 per cent and in Chhattisgarh from 19.3 per cent to 40.7 per cent. [44](#)

Enrolment data presents a vivid picture of the shift. In Uttar Pradesh, enrolment in government schools dropped by 59 lakh and shot up in private schools by 92 lakh. In Rajasthan, student count in government schools dipped from 79.49 lakh to 62.66 lakh and rose in private schools from 40.17 lakh to 58.91 lakh. In Punjab, the ratio of students in private schools climbed from 15 per cent in 2005 to 41 per cent. Six of ten students in Maharashtra are enrolled in private schools and every second student in Telangana and Andhra Pradesh is enrolled in private schools.

For a perspective of the scale of exit, consider this: the fall in the number of students in government schools in just a decade is more than the total number of students enrolled in Maharashtra. And the rise in the total number of students in private schools is more than all the students enrolled in Bihar.

Even though education in government schools is free, parents choose to pay for private education.

* * *

The genesis of expansion of private schools is located in the precipitation of a crisis.

Post the 1991 bailout, India had cut back on social sector spending. In February 1995, a routine assessment of programmes led to a shocking realization in the HRD ministry. Gross enrolment had dropped in 1991 to 1977 levels, from 100 per cent to 81.7 per cent, and it was worse in the Hindi-speaking states and among disadvantaged classes. [46](#)

Madhavrao Scindia, then HRD minister, discovered that every initiative launched post the 1986 New Education Policy was performing subpar. Montek Singh Ahluwalia, then finance secretary, cautioned that India could not create a credible strategy for growth and modernization if there were large gaps in investment in human capital. [47](#) There were factors in play, primarily the insufficiency of

access to schools across India and the rising number of children who needed to be schooled. In 1997, one in six, or around 1.96 lakh rural habitations, did not have a school within the stipulated national norm of 1 km. ⁴⁸ There were also more children to each school than the norm mandated. Between 1991 and 2001, the number of children in the age group of five to fourteen went up from 210 million to 253.1 million, a jump of over forty-three million in a decade. ⁴⁹

While the Ninth Five-Year Plan underlined education as ‘the most crucial investment in human development’ and urged the ‘private sector and NGOs to play a major role’, change was stalled amidst poor funding and systemic sloth. In 2002, the Tenth Five-Year Plan estimated that over forty million children of school-going age were not attending school and reiterated the need for supplementing the effort of the government. It underlined the need for ‘a synergetic public-private partnership’ and emphasized the need to ‘encourage the opening up of private schools’. ⁵⁰

It was the perfect cocktail. There was capacity gap, fall of public confidence in government schooling and surge in private aspirations. Over the next decade and more, an array of institutions and models came into play to create capacity and set up private schools – aided, unaided, specialized, gender-focused, philanthropic, budget, etc. – across the country.

The expansion of private schools across India is best illustrated by the growth of India’s large school chains. DAV Schools, started by the Dayanand Anglo-Vedic Education Society, later renamed as the DAV College Managing Committee, is among India’s largest school chains. Its first school was set up in 1885 in Lahore. As of 2018, it ran over 900 schools (over 700 directly as DAV Schools and rest as aided schools) and integrated colleges that educated over two million students.

The Delhi Public School Society, founded in 1941 as the Church High School and rechristened as Naveen Bharat School in 1947, is now called Delhi Public School (DPS). In the new millennium, DPS has added over 100 schools in India; in 2018, DPS had 202 schools with over a million students on its rolls.

Demand has spurred expansion. A large number of school groups, also known as the K12 school chains, spread across India providing access to students. The templates of the school chains vary from purely private to philanthropic to hybrid not-for-profit models as state or regional or national chains of schools. Then there is also the Guinness Book record-holder – the City Montessori School. It was founded in 1959 with five students and a capital of Rs 300 by Jagdish and Bharti Gandhi to inspire children to become ‘motivated and conscious citizens’. In 2018, City Montessori School was the world’s largest school, with over 55,000 students, 4,500 staff and spread across eighteen campuses in the city of Lucknow. [51](#)

The opportunity in the opening up of this education sector has adroitly been leveraged by political education barons – politicians armed with inside information and knowledge of both the cause and the consequence of cuts in spending on education. Within a decade, politicians from major and minor political parties have turned ‘philanthropic’ and set up education trusts for starting schools and colleges. They have the wherewithal to get land, push clearances and propel policy in their direction. Such is the importance of being an e-baron that even within the political world it’s a sign of having arrived and shows the quest for immortality, both personal and political.

The moot question thus was whether or not those invested in the business model would want to alter status quo and usher change. The answer was embedded in the 2001 DISE report. It observed, rather presciently, that ‘the increased preference for private, fee-charging schools is resulting in a diversion of students from government to private schools’. The reason was ‘disillusionment among parents about the role of government schools’. The report added, hopefully and piously, ‘government schools must become competitive to the private schools rather than being condemned as beyond repair’. Piety and hope got waylaid.

In just five years between 2001 and 2006, the number of private schools jumped from 99,849 to 1.89 lakh and reached 3.34 lakh by 2016. In the decade between 2007 and 2016, more private schools were set up than government schools – 90,573 compared to 70,079 by the government. The rise in the number of private schools was in

the poorest states and also in the prosperous ones. The count of private schools nearly doubled in Uttar Pradesh, Chhattisgarh, Haryana and Gujarat, and quadrupled in Punjab.

The critical question therefore is: Are private schools delivering on learning outcomes? Dharamdev Vidyarthi, regional director of DAVMC, puts it succinctly: ‘Quality of education is relatively lower in government schools. Each year the pass percentage of government schools differs by around 30 per cent from private ones. Unlike private schools, a government teacher faces negligible risks if the result of her/his class is not at par. This has led to the belief that “whether you teach or not you are going to stay”.’

Vidyarthi adds that the law mandates, ‘The central government shall develop and enforce standards by “providing training facilities for teachers” to “ensure good quality education conforming to the standards prescribed under Section 29 of the RTE Act”. In reality, these rules are not being adhered to, with the result that teachers lack expertise and seriousness about work.’

In some places, private schools do deliver better. In Andhra Pradesh, for instance, as per an ASER study, only 32 per cent of Class V students in government schools could read a sentence as against 70.8 per cent students in private schools. In Class VII, the ratio was 56 per cent for government schools and 85.6 for private schools. At the national level, 31 per cent of Class VII students in government schools could read a sentence compared to 58 per cent in private schools. [52](#)

Academics and scholars are not completely convinced and are divided. They point to the many variables and the absence of a robust way to adjust performance for parentage, parenting and prosperity effects, and hence, often the school effect may actually be parent effect. A 2018 World Development Report by the World Bank says, ‘Comparisons across forty countries that seek to adjust for these differences in student characteristics find no private school advantage in the vast majority of countries.’ [53](#)

The question is stranded between variables and interpretations. Muralidharan and Sundararaman say, ‘There is very little rigorous empirical evidence on the relative effectiveness of private and public schools in low-income countries. Non-experimental studies

have [. . .] typically found that private school students have higher test scores, but they have not been able to rule out the concern that these estimates are confounded by selection and omitted variables.’

[54](#)

James Tooley, in his paper which looked at the conclusions of Muralidharan et al, argues that ‘comparisons between children in Telugu-medium private and public schools, where children took tests in the same language (and were also not subject to disruption in medium of instruction), show that students in private schools outperform those in public in all subjects’.

[55](#)

The UK government’s aid agency, Department for International Development (DFID), finds evidence suggesting academic betterment in private over government schools. Laura Day Ashley and Joseph Wales, who did a study titled ‘Impact of Non-State Schools’, point out that ‘a common finding is that private and philanthropic schools [with little evidence on religious schools] fare better in terms of quality learning outcomes [moderate evidence] and teaching [strong evidence] compared with state schools.’

[56](#)

A study published in March 2018 by Emily Smith-Woolley and Robert Plomin looked at it in the context of students attending grammar schools or private ones in the UK doing better. Critical influencers in any kind of school (government or private) leading to better outcomes can be the family background (not necessarily connected to prosperity) and the hours parents devote to children. The scholars looked at why parents choose private schools, given the high fees, the stress of the selection process, etc. and found that the primary reason was the expectation and promise of superior academic achievement.

The scholars used a sample of 4,814 genotyped students to ‘investigate exam performance at age sixteen and genetic differences between students’ in state-funded non-selective schools, state-funded grammar schools and private schools. Their conclusion: after ‘accounting for the variance explained by heritable selection factors’, there was no significant difference between the students of the three school types.

[57](#)

Amidst the ricocheting

variables, arguments, theories and conclusions, one thing is clear: not enough is known to know for sure one way or another.

So, why do Indian parents choose to send their children to private schools? The seventy-first round of the NSS, 'Education in India', provides some insight. Eleven per cent would rather have their children educated in schools where the 'medium of instruction is English'. Over 22 per cent feel 'the quality of education in government institutions is not satisfactory'. For over 58 per cent of the parents admitting their children to private primary schools, the choice is driven by the perception that private schools provide a 'better environment for learning'.

Some hard lessons in there, should governments choose to learn.

* * *

Private aided schools, private unaided schools, philanthropic schools, low-cost budget schools and even unrecognized schools – the menu of educational choice is expanding. Parents are voting with their feet against state failure, more so since the ecosystem is offering a variety of options to choose from.

Meet Savita, Divya, Pragati and Sandhya. Pragati aims to be a psychologist, Savita wants to be a doctor, Divya wants to be a doctor and a social worker and Sandhya wants to be a political leader. Confident and curious, they are full of questions that they fire away in English and Hindi. They scarcely betray any trace of nervousness or signs of their background. They could be bright-eyed students from a metropolis.

They are daughters of farmers from the villages on the outskirts of Pune. Pragati, Savita, Sandhya and Divya are students at Avasara ('opportunity' in Sanskrit), a special school for girls from underprivileged backgrounds, started by economist Roopa Purushothaman and her educationist husband Joseph Cubas. Set up to school 600 students, Avasara currently has over 350 students on its rolls – both day scholars and boarders. The students start in Class V and come from different backgrounds. They are chosen through a collaborative programme with multiple organizations, including Ashraya, Nandan Foundation, Nanhi Kali and Teach for India.

Purushothaman says, ‘Avasara is building a movement around excellence in girls’ education and leadership in India.’ Cubas adds that the ‘classes are of sixty minutes, for around twenty-five students per class’ and are focused on self-development. Avasara follows the International General Certificate of Secondary Education (IGCSE) curriculum. Besides the regular classes, the school enrolls students for courses in leadership, entrepreneurship, Indian studies and even sports depending on their interest. Specialization is backed by counselling and mentoring by advisory groups.

The institutional model itself is interesting. It is a donor-driven initiative as of now. Some donors support a larger percentage of the whole project, mid-range donors support specific programmes and/or line items (for instance, meals or sports coaching) and personal donors sponsor individual students. Purushothaman and Cubas hope to establish endowment in the medium term to reduce the annual fund-raising requirement.

It costs Avasara approximately Rs 2.5 lakh per student per year to deliver education. Cubas points out, ‘All students receive some level of scholarship to attend the school. The average amount a family will actually pay, after the awarding of a scholarship, is Rs 5,000 for the academic year.’ That families are willing to pay Rs 5,000 to educate a girl child in a private school speaks volumes not only of the aspiration quotient for their child but also the parental pride in their child’s visible progress.

The girls, who come from villages and municipal or low-cost private schools, are thrilled. For starters, the teacher knows them and they get personal attention and answers. Savita says, ‘Every time we go back to the village, others want to know what we study, how we study.’ With a sparkle in her eyes, Divya adds, ‘Earlier, we were girls. That’s all. Now, I, and all of us, can see a slow shift in the way people at home respond to what we are learning and speaking about – they are listening to our views.’ Pragati jumps in to say, ‘Sometimes I feel they are changing with us.’

There are individuals inspiring innovation and then there are institutional initiatives. The Satya Bharati Schools constitute perhaps India’s largest philanthropic effort in education. Sunil

Bharti Mittal, chairman and CEO of India's largest telecom giant Bharti Airtel, started off like most entrepreneurs by contributing to NGOs like Akshay Patra, the largest donor-based student-meals programme.

His initial instinct was to create an endowment for long-term philanthropy, the ideas stemming from his interactions with other global entrepreneurs. After a couple of meetings and a lunch with Bill Gates, he was convinced that being on the sidelines was not going to be enough. He met with other philanthropic institutions and decided to scale up his intervention. In 2000, he set up the Bharti Foundation with a kitty of Rs 200 crore. His dream was to set up 500 schools and educate at least 1,00,000 poor children.

It was not easy to try and set up a school. There was the bureaucracy and then there was the socio-political context to deal with. But he persisted with setting up schools from scratch by working with local communities. Effort and public appreciation delivered goodwill. Soon enough, the Rajasthan government asked the Bharti Foundation if it would adopt schools in one block, then two and then in many. The model was simple. The state transferred the management of the schools to the foundation. It was allowed to renovate and redesign the physical and human infrastructure. It was a brave experiment and it caught the attention of parents and other state governments. Other companies and even individuals came in, offering to fund the cost of running five or ten schools.

Mittal is used to scale – his mobile telephony business hosts over 300 million subscribers – and he scaled up the philanthropic avatar of Bharti Airtel too. Bharti Foundation now runs multiple programmes – the Satya Bharti Schools, Satya Bharti Quality Support Programme, Satya Bharti Learning Centres – across thirteen states in over 3,700 villages and towns of India, delivering education to over three lakh students in 2,100 schools with over 12,000 teachers.

There are a few other rich individuals, corporate bodies and trusts across India also pitching in with different models and different structures to ramp up capacity in education. State governments, now all too aware of the glaring fault lines in the state education systems, are creating room for them. In December 2017, the Maharashtra

government passed an amendment to the Maharashtra Self-financed Schools (Establishment and Regulation) Act, 2012, making it easier for ‘any registered company or a registered trust or a neighbourhood society of a local authority desirous of establishing a new school’ at any level after due process with locational, area and systemic concessions.

Capacity has also been created by the poorest of the poor. In 1978, Ahmed Ali from Karimganj in Assam, a rickshaw-puller, now over eighty-two years old, sold thirty-two bighas of his own land to set up the first school so that others did not have to suffer like he did. In the years since, Ali has set up nine schools with over 3,000 students on the rolls. Ali, who had to drop out of school because of poverty, is guided by his own moral compass and says, ‘It is a sin for anybody to not be educated.’ His compensation is the joy he feels when he sees boys and girls attending school. In an era where philanthropy is often a platform for self-promotion, the schools do not bear his or his family’s name. It was only recently that the villagers forced him to name one of the schools ‘Ali’. ⁵⁸ There are others like Ali who have stepped in with private money and personal passion to bridge the gap left wide open by the state in keeping a promise made to the people in the Constitution seven decades ago.

Individual inspiration and institutional innovation thrive cheek by jowl amidst systemic dysfunction. Across India, innovative ideas proposed and promoted by civil society organizations dot the education landscape, with different organizations promoting various ideas for greater inclusion. The Centre for Civil Society, a Delhi-based think tank and one of the leading campaigners for reforms in education, runs a programme called School Choice, with the seductive motto ‘Fund Students Not Schools’. One of the initiatives of this programme funds 400 girl students in schools of their choice.

This scheme is a bridge offered to families to be able to choose better education. Operationally, it’s a simple step-by-step process. Families from socially and economically disadvantaged backgrounds are made aware of the scheme. Any family with a child in Class I of any government or local-body school can apply. Interested families are assisted in filling up the necessary forms.

The children are chosen using a computer-based randomized selection process in the presence of and with the cooperation of local councillors and leaders. Once chosen, the parents must choose a school that they would like to admit their wards in. The parents are then given a voucher, currently Rs 4,000 for the academic year, split into four quarterly payments. Funding is through a donor and partner programme.

The School Choice programme is based on the belief that ‘quality education is possible only by ensuring accountability’. The idea is that parents must be enabled to choose the best school for the needs of their child and thereby demand quality. The idea, says Parth Shah, who heads CCS, ‘It is not just about the right to education but the right to education of choice’. CCS hosts a mass advocacy platform for voucher funding of schooling and has on its own funded over 800 students in Delhi-NCR (National Capital Region) schools.

There is a clear shift in mindset among the poorest of the poor. Rashmi, barely twenty-five, sweeps and swabs four homes every day. Her husband washes cars at two housing societies. They are migrants and have a small alcove to stay for free because Rashmi’s husband doubles up as the building’s security guard on night duty, plus filler of the water tank, also the one who switches the building’s lights on and off, etc. Together, they earn around Rs 6,000. They have a four-year-old daughter whom her husband drops to school and whom she picks up. This is not a government school where education is free and it’s not under the RTE quota either where their daughter will be among ‘rich children who will think less of my child’. So, their child studies in a private school that costs them around Rs 1,500 per month.

Rashmi is among those who are poor but willing to pay a price of putting their child into a private school, not as a cost but as an investment for the future. This is, unfortunately, setting up its own matrix of pressure on the families who must put up with the razor cut of high-fee private schools where education has become a money-making machine. Some statistics from the seventy-first survey of the NSS on ‘Participation and Expenditure on Education’: at the primary level, the expenditure incurred by a student in an

academic session in a government school is Rs 1,111, which is nearly a tenth of Rs 10,623 payable in private unaided institutions; at the upper-primary level, the average expenditure at a government school is Rs 1,869 vis-à-vis Rs 13,808 in private unaided schools, and at the secondary level, Rs 3,724 compared to Rs 15,874 in a private unaided institution.

Of course, not all parents are sending their children to high-fee private schools. There are those choosing private budget schools where the fee is around Rs 6,000 per annum. Geeta Kingdon, development economist and Chair of Education Economics and International Development at the Institute of Education, observes that fees vary ‘from Rs 117 per month in rural UP to Rs 692 per month [six times higher] in rural Punjab, or from Rs 250 per month in urban UP to Rs 1,800 per month [seven times higher] in urban Delhi’. ⁵⁹ Unlike government or private aided institutions, budget schools work on a business model wherein per-pupil expenditure is lower than in government schools. ⁶⁰

Such budget schools are now in both urban and rural areas, says the CCS’s report on Budget Private Schools in India. James Tooley, a budget school evangelist, has looked at ‘Understanding Parental Choice for Budget Private Schools’ and after some ‘quick and dirty’ calculations, claims that ‘in India, total children in low-cost private schools could be around 92 million, around 30 per cent of all school-aged children’. ⁶¹

Budget or high-fee private schools admitting children is not without risks. Following the enactment of the 2009 RTE Act, state governments are obliged to act on schools that do not meet the criteria laid down – area, open space, wall, playground, etc. Till 2015, over 19,414 private schools have been closed down by state governments due to requirements not being met. ⁶² In March 2018, in Kerala, over 1,500 schools were issued notices to close down. ⁶³

Worryingly, there are also ‘unrecognized schools’ if state governments care to pay heed. Right in the national capital of New Delhi, marked on digital maps as ‘Public Schools Road’ in Sangam Vihar, students not in uniform can be seen making their way to schools. While government – central and state – officials file

disclaimers on unrecognized schools, it is simply not enough. Over 16 per cent of parents in rural India and over 12 per cent in urban India who send their children to private schools are sending them to ‘unrecognized schools’. ⁶⁴ The Report of the Committee for Evolution of the New Education Policy states that in 2014-15 ‘there were 23,529 unrecognized institutions, with an enrolment of 33 lakh at the elementary level.’ DISE 2015-16 puts the number of unrecognized schools at 24,852. ⁶⁵

How do students work their way from unrecognized schools to board exams? The system, it could be said, is accommodative. Some unrecognized schools have informal teaching tie-ups with mainstream private schools. Some unrecognized schools get their students to appear as students of government schools for board exams. The payoff for the government schools is a better record of pass percentage. For the parents, the returns outweigh the risks as they would rather send their children to unrecognized than to government schools.

James Tooley rounds it up succinctly: ‘The poor are not willing to acquiesce to the mediocrity of government education.’ ⁶⁶



The failure of the state to provide decent educational services has had multiple consequences. Serendipitously, this has also resulted in education services which can be dialled into or customized, the physical, brick-and-mortar school model morphing for students.

Across India, behind most city buses and auto-rickshaws, inside newspaper leaflets or on colony gates, ‘tutor available’ is a ubiquitous message. Meet Bhavin Shah, the accidental teacher. On any weekday, Shah is a busy man. A trained engineer, he runs a successful business, marketing engineering adhesives, sealants and lubricants in the first half of the day. Around 2 p.m., he reaches his home in Mumbai’s Andheri and unrolls a white board. Every day, in three batches, 2.30 p.m. to 4.30 p.m., 4.30 p.m. to 6.30 p.m. and 6.30 p.m. to 8.30 p.m., he teaches physics, chemistry, biology and mathematics to students of Classes VII, IX and X students.

Shah, a ‘hobby’ teacher, began by teaching his daughter when he found students simply mugging and not learning. He wanted to make education joyful and instil interest in subjects instead of an unhealthy obsession with marks. Slowly, his daughter’s friends sought his inputs, followed by his neighbours’ children, and the demand for his teaching grew. Now, one doesn’t have to remember the tower or the floor or his flat number – people just have to mention ‘Bhavin Sir’ to the security guard outside. Also, for Shah, this is neither his profession nor a business, although he does ‘let parents pay’. In a sense, Bhavin Sir is a boutique tutor.

Tuitions are among the fastest-growing services – private tutors are substituting and supplementing what is missing in the government education system. Often, when the tutor says ‘small batches’, they are talking about twenty-five students, whereas larger coaching classes could have up to forty students. The reasons are many – hyper-competition, working parents, lack of discipline and more. The principal reason, though, is the quality of teaching and the quality of attention. Shah points out that such is the surge in demand that ‘parents of kids in Classes I and III come looking for tutors’.

Many of the parents, who themselves are not educated or who are first-generation literates or from particular backgrounds, fear their children will lag behind. And although it costs them a lot, they are willing to make the investment – it could cost students anything between Rs 2,000 per month and Rs 10,000 per month per subject, depending on location, level and service. A study by the Associated Chambers of Commerce and Industry (ASSOCHAM) puts the private coaching market at around Rs 2.5 lakh crore. [67](#)

Effectively, students are going to school twice and parents are paying fees twice or more. The seventy-first NSS report, based on a survey of 66,000 households done in the first half of 2014, reveals that almost 26 per cent of all students were taking private coaching. The NSS estimates that over 273 million students were enrolled at different levels across the country, of whom about 197 million were in schools. The math is mind-boggling – over seventy-one million students in all and over fifty-one million school students were

taking tuitions. Nearly 11 per cent of the families' total household expenditure is for their children to learn a second time.

How do John, Jaani or Janardhan find the right master for the right subject at the right time in the right city? Earlier options were limited to neighbourhood knowledge, corner-shop communication or persuasive publicity. Start-up entrepreneur Rajesh Kalra set out to answer this very question through his enterprise, UrbanPro, which calls itself the 'one-stop learning partner for every Indian'. It is an online aggregator that enables students and parents to locate a choice of tutors in their area by subject and cost.

Kalra hit on the idea experientially. A techie, he had worked in the US and with early-phase start-ups. When he returned to Bengaluru and was looking for schools to admit his children to, the former student of Kendriya Vidyalaya, Chandigarh, discovered the precipitous fall in schooling and teaching standards. As he puts it, 'It was really surprising how bad schools are.' Clearly, students needed post-school help.

Start-up entrepreneurship in the technology space is really the art of finding and bridging the gap between demand and supply. Using his experience at a healthcare start-up in the US, Kalra set out with a team of four people and funding from angel investors to build a platform that could connect parents and tutors. The search engine allows students to enter their requirements. The system then presents options and the selected tutors share a portion of the fees with UrbanPro.

As of March 2018, UrbanPro, which has since received a \$2 million in funding from Nirvana, is one of the big players in the online tutor booking segment. The model is simple – go online, search for a tutor for whatever you want to learn and, based on responses received, select a tutor. UrbanPro has over 6.5 lakh registered tutors offering coaching – from Class I to competitive exams – and has a presence across twelve cities and is expanding. Kalra and his team of 110 now handle over one lakh tutor requests from students and over 10,000 tutors' enquiries for registration. Rajan Mehra of Nirvana Ventures says, 'Top-down spend by consumers on education is in billions of dollars and spend on tutors is up there at the top.'

And Google validates the breadth and depth of the opportunity. A simple ‘tutor India’ search throws up over five million results and dozens of players, ranging from offline tutoring to home tutors to online tutors. India has over 275 million students at various levels, over fourteen million schools, over 750 universities and thousands of colleges.

There are online tutors and then there is online learning. Byju Raveendran grew up in Azhikode village in Kannur and went to a regular government school where his parents were teachers. ‘It was not an English-medium school and I was not the best student for sure,’ he clarifies, half in jest. ‘My knowledge of English is mostly from listening to commentary. I spent more time outside the house and sometimes outside the class and it forced me to develop a way to learn by myself.’ Byju studied engineering because there was an engineering college in the next town, but living close to home bought him time to learn life skills as well. Between 2005 and 2011, he worked as an engineer with a ship management firm.

Byju got into teaching ‘some time around 2011. Initially, it was informal and I taught mathematics to a few students.’ He recognized there was a desperate need not just for teaching but also for ‘teaching learning’. Byju put pen to paper and drew out a plan and founded Think and Learn Pvt. Ltd. His first formal session had thirty-five students and by the sixth one he was teaching 1,200 students, mostly thirteen- or fourteen-year-olds. Within weeks, he was travelling to different cities, teaching in auditoriums and in stadiums. ‘The biggest,’ he says, ‘would have been 24,000 students at the Indira Gandhi Indoor Stadium.’ Like a crowd at a rock concert.

During 2011–14, Byju focused on building a team of experts ‘to create world-class content’. As his plan evolved, in a parallel world two things came together: the launch of faster networks and the penetration of smartphones. He started off with a programme designed for tablets for students from Classes VIII to XII. BYJU’s, the app, followed.

‘The stress,’ says Byju, ‘is on taking the stress out of learning.’ His ad for the app called students ‘to fall in love with learning’ and focused only on them. The app has a platform for two-way

feedback. Byju says that the learning is through contextual modes and that it is not yet known whether visual scores over context. ‘The best part of the app,’ Byju says, is that ‘it leverages personalized feedback using the data on how students learn, what they learn and when they learn.’ Data also enables constant evolution of the content and the app itself.

A steady stream of investment followed. His investors include the Chan Zuckerberg Initiative (CZI), set up by Facebook founder Mark Zuckerberg and Priscilla Chan, which supports innovation in learning; Sequoia Capital; Sofina; Verlinvest; Lightspeed Venture Capital; International Finance Corporation; Tencent; Times Internet owned by the Times Group; and Aarin Capital set up by brothers Ranjan and Mohandas Pai. Bollywood actor Shah Rukh Khan is the brand ambassador of Byju’s.

Money has helped expansion and development. As with any streaming service, students can choose from per-month or annual packages that depend on a variety of factors and subscription. The renewal rate is over 75 per cent. In 2018, Byju had over thirteen million registered users on the Learning App. ‘We are still evolving, customizing, we are not even reaching one per cent of the student population,’ he says, even as he is planning the expansion to regional languages. In March 2019, Byju claims the Learning App was clocking over Rs 1,400 crore in revenues and had over thirty-five million registered users. ⁶⁸ And Byju, who owns 21 per cent of the equity, thereby making him a billionaire, plans to team up with Walt Disney Co. in 2020 to take the services to the US. ⁶⁹

There are also the philanthropic initiatives leveraging the potential of technology to reach out to those in disadvantaged situations to deliver education. The Azim Premji Foundation, set up in 2001 and funded by tech entrepreneur Azim Premji, states its objective: ‘To create a vibrant learning environment by providing free and easy access to relevant knowledge resources to all our users.’ Over the years, the foundation has emerged as a repository of research on education, engaging with stakeholders from students to teachers, administrators and policy-makers. It runs learning guarantee programmes in schools across four states, education leadership programmes, a university, public libraries and field

institutes – its wide swathe covers teaching teachers to educating students.

The Piramal Foundation for Education Leadership runs the School Leadership Programme. The idea behind the initiative, the foundation states in its purpose, is to focus not just on schools but ‘the entire education ecosystem’. The programme engages with the teaching faculty, community leaders, officials from the education department and inducts youth from across India’s leading colleges to build capacity. Over 3,400 rural schools, with over 5.6 lakh students, are currently working with the foundation. The Gandhi Fellowship, with more than 600 alumni, is developing a system to prepare a cadre of leaders to bring about a change in the complex landscape.

EkStep Foundation, set up by Infosys founder Nandan Nilekani and his wife, Rohini, is focused on creating societal platforms. EkStep, which describes itself as ‘an open-learning platform, with a collection of resources in literacy and numeracy’, is focused on creating content that will enable fundamental skills such as reading and understanding mathematics. Shankar Maruwada, CEO of EkStep, explains the endeavour rather lucidly. ‘Fixing the issues in education will require collaboration of the sarkar, samaj and bazaar – that is, the government, society and markets.’ The government is not the best at putting ‘risk’ capital to work to drive innovation. Market won’t because there is no return. ‘Societal platforms funded by philanthropic risk capital,’ explains Maruwada, ‘can bring in innovation that markets won’t and government cannot.’

EkStep Foundation has built an open-source digital infrastructure for learning called Sunbird, with the belief that for contextual solutions to be developed at scale, a shared digital infrastructure would be required to enable innovative and evolvable solutions. The idea is to create an ecosystem that makes available to students and teachers the resources that enhance the quality of teaching, learning and outcomes. The Sunbird platform, built on open-source code, now forms the base of the Government of India programme called Digital Infrastructure for Knowledge Sharing (DIKSHA), launched in September 2017 – it is for use by states to leverage technology and develop solutions for learning. One of the verticals of the

platform is to enable greater access to digital teaching and learning materials for teachers and learners. In June 2018, five states – Tamil Nadu, Andhra Pradesh, Maharashtra, Rajasthan and Uttar Pradesh – printed QR codes in textbooks and distributed them to teachers and students/learners. In 2019, the QR code idea has been taken up by twenty-nine states and union territories. The QR code is now available for consumption of content in forty-five crore textbooks and in fifteen languages – there are fifteen QR codes per book.

Here is how it works. Experts and teachers in various states curate and create content for teaching and learning, aligned to QR codes in the textbooks. The choice of which chapter, which language, which textbook is made by academics of the states. Teachers can access content on their phones through the DIKSHA app. The content can be accessed across five device interfaces – phone, mobiles, projector, computer and televisions – and is available for use offline. It can be used to prepare for class and also prepare the class to learn better.

Interestingly, the anonymized usage data is available to administrators to improve the content. The ability to continuously fine-tune and add content enables teachers and learners to access fresh materials, improving both teaching and learning outcomes. While it is still early, the usage of the app reveals patterns like teachers using material on weekends and Sunday nights to prepare for class. The QR-coded textbook is not new but the facility for continuous curation of content and making it available across devices makes it unique for teachers and students.

Bengaluru, being the start-up capital of India, has created an ecosystem for experiments and experiences to empower the disadvantaged. Brothers Harsha and Soorya Mahabala came up with an interactive platform, Edutel, to serve students from low-income families. Funded by the Michael and Susan Dell Foundation, it uses two-way satellite technology, along with terrestrial links, to beam live lessons by specially selected teachers to students in over 2,000 primary and secondary schools in Karnataka.

The Tata Trusts, in 2015, entered into a strategic partnership with the Khan Academy, the not-for-profit institution set up by former hedge-fund manager Salman Khan, to provide free world-class

education to anyone, anywhere in India. Among other steps, the California-based Khan Academy added the mathematics curriculum of the CBSE for all students from Classes V to XII. [70](#)

Philanthropic capital is moving from blanket funding to focused themes and funds are being set up to enable outcomes. In November 2017, Amit Bhatia, CEO of Global Steering Group (GSG) for Impact Investment, announced the setting up of a new fund called Social Finance India. Tagged India Education Outcomes Fund, it is targeted at enabling technology innovation in the education sector to improve the quality of learning outcomes.

There are hybrid initiatives too, riding on for-profit platforms. Some time in 2014, Harit Nagpal, CEO of Tata Sky, one of India's biggest direct-to-home (DTH) entertainment service providers, and his team were looking at ideas on how to expand their footprint and add value to the lives of their subscribers. One area was education and the company was already beaming paid-for courses in basic spoken English, general knowledge, acting and physical fitness.

The discussions threw up ideas like tutors-at-home, a reality show and information about an in-house initiative. Within the Tata Group, one of the philanthropic arms, Tata Class Edge, had been for some years creating specialized content on compact discs and leaving it at government schools in the hope that some day someone would play them and enable children to learn better.

Nagpal and his team worked with the Tata Class Edge team and decided to bring this content targeted at school students on board their platform. It was decided that Tata Edge would produce content for Classes V to VIII – lessons in mathematics and science relevant to their syllabus. The costs would be split between Tata Sky and Tata Class Edge, with the former deploying it on DTH and the latter on digital platforms.

In June 2016, Tata Sky offered the content on air as an anytime-learning tool to over seventeen million connected homes. The idea caught on among parents and students and, of course, enabled the acquisition of new subscribers. Now, the stay-at-home, learn-at-home facility on Tata Sky has over 50,000 subscribers, many of them from the metropolitan cities of Mumbai, Pune, Hyderabad, Bengaluru and Thane, paying Rs 90 per month. Nagpal and his team

are now toying with the idea of offering it free in the states of Uttar Pradesh, Bihar and Madhya Pradesh, along with the regular vanilla package – for Rs 200, the family gets a tutor education at home.

Incidentally, the idea of reaching students at home through the television is not entirely new. As early as 1975, the Department of Atomic Energy of the Government of India entered into an agreement with NASA to jointly conduct a satellite instructional television experiment (SITE) to provide an informal education to rural India through the medium of television. The content was split into two segments: educational television for schoolchildren in the age group of five to twelve years and instructional television for adults. It was available in six states. The experiment catalysed interest and attracted viewership and praise but inexplicably was not renewed post 1976 and the NASA satellite moved away.

In 1982, SITE was relaunched on an Indian satellite and then in 2004 was mounted on an educational satellite (EDUSAT). Over the years, the experiment has evolved at a glacial pace. Since then, SITE has morphed into many avatars and is now called Swayam Prabha. Under this, a group of thirty-two DTH channels are available on GSAT-15 satellite for the broadcast of educational programmes produced by the National Council of Educational Research and Training (NCERT), Indira Gandhi National Open University (IGNOU), National Institute of Open Schooling (NIOS), National Programme on Technology Enhanced Learning (NPTEL), the Indian Institutes of Technology (IIT) in Delhi and Chennai, and the Consortium for Educational Communication of the University Grants Commission (CEC-UGC). ⁷¹ The government has also mandated private DTH providers to make these channels available on their platforms, so they are dished into the homes of 220 million subscribers. Opinion on the content, its viewership and impact are varied. Suffice to say that despite being on mass media, it hasn't quite captured the imagination of the masses.

There is a precipitation of disruption across the education landscape. Educators, investors and entrepreneurs are leveraging technology to deliver access and affordability via differentiated modes to segmented populations in cities and in remote locations. Amit Patni of Nirvana Ventures points out that the scope is huge: 'I

think education is the need of the hour. A lot needs to be done and is being done in education. People are looking to find the right course and entrepreneurs are trying to interpret these needs.’

Driving this growth will be disruptive technology and consumption, new delivery systems and changing consumer needs. Venture capitalist Mohandas Pai foresees ‘large-scale disruption as parents and students seek customized, disaggregated solutions to meet individual needs and aspirations’. Start-up entrepreneurs believe one of the focal points of all enterprises would be to generate and sustain interest of the students in the learning process or, as they put it, ‘create stickiness’.

Already, some education apps are driving subscription and outcomes by installing incentive-based learning and this is expected to expand the adoption of what is called by the cool set as the ‘gamification’ of education. This will drive peer-to-peer, peer-to-tutor and peer-to-machine processes. Growth will be driven by adoption of hybrid models of engagement – physical and virtual, offline and online, on screens of devices and also television.

There is demography and then there is the hope of dividends. India will have the largest tertiary age population in the world in 2020 and possibly the second largest number of students enrolled in graduate classes. Rising aspiration is expected to further drive migration from the government to the private sector. It is estimated that the education market, currently valued at around \$100 billion, is expected to nearly double to \$180 billion by the end of the decade and the school segment valued at \$52 billion to contribute 52 per cent of the education market. ⁷²

The wow factor of the scale of the market and its growth is manifest in the flow of private capital into the sector. By one estimate, over \$1.5 billion has been invested by venture capitalists into the education sector. Government data shows that between April 2000 and December 2017, India attracted over Rs 9,586 crore (\$1.6 billion) in foreign direct investment into the sector. ⁷³ A May 2017 KPMG–Google study estimates that India’s online education industry will grow almost eight times from 1.6 million users in 2016 to 9.6 million in 2021.

Thanks to rising aspirations, the gap in quantity and quality is only expected to widen and this, forecasters say, will propel both parents and policy to move towards e-learning. An India Brand Equity Foundation report pegs India as the ‘second-largest market for e-learning after the US’, with its sector size expected to touch \$5.7 billion by 2020. Global player Coursera revealed that of the over twenty-six million enrolled on Coursera, over two million are from India. Its India director, Raghav Gupta, points out that the portal is adding around 50,000 users every month. [74](#)

The promise of the potential, evident in the forecasts, is also a validation of an abject reality. In March 2019, Preeti Tankwal went to a school run by the zilla parishad in Hinjewadi, bang in the centre of Smart City Pune’s IT hub. She had gone to file documents for voter identity as the school is a polling centre. What she saw made her gag. The school, with 1,400 students, was functioning without clean toilets and boys and girls were going behind classrooms and buildings to answer nature’s call. Water supply was inadequate, taps were broken and the drains were choked. The school was chosen for e-learning facilities but only one of the eight computers was functional. [75](#)

Victor Hugo writes in *Les Misérables* : ‘Society is culpable in not providing a free education for all and it must answer for the night which it produces. If the soul is left in darkness, sins will be committed. The guilty one is not he who commits the sin, but he who causes the darkness.’ [76](#)

Those causing darkness – and still refusing to repair India’s broken education system – continue to be safe in the alley of alibis.

4

POWER

Short Circuit

Thirteen families have decided not to sleep on the night of 28 April 2018 in Leisang, Manipur. Darkness sets in, the excitement is palpable. At around 6 p.m., a bulb flickers to life – it's the first bulb in the last village in India to be electrified. For the first time in their lives, the Lalboi Haokip family, in whose house power came on first, and all the other families can see what the innermost recesses of their homes look like after night-fall. The entire village of Leisang had been making do with solar lights or dynamos sourced from the neighbouring country of Myanmar. ¹

The next day, the Prime Minister of India tweets: '28th April 2018 will be remembered as a historic day in the development journey of India. Yesterday, we fulfilled a commitment due to which the lives of several Indians will be transformed forever! I am delighted that every single village of India now has access to electricity.' ²

On 23 May 2018, Tongsat Haokip from Leisang met the chief minister of Manipur in Imphal to submit a memorandum requesting better infrastructure, including all-weather roads, schools and better power supply. 'We get electricity for a day after power cut for two days and this has become a routine.' ³ By September 2018, the supply of electricity had worsened. As one village elder put it, 'We used to get about four hours of electricity and then the hours dwindled to minutes.' ⁴

The gap between promise and performance is stark. Technically, as per the Rural Electrification Policy of 2004, a village is defined as electrified ‘if electricity is provided to public places such as schools, panchayat offices, health centres, dispensaries and community centres’.

On 8 July 2019, BJP MP Kirron Kher asked the government ‘whether nearly 40 per cent of the schools in the country do not have electricity’. The answer: ‘As per Unified District Information System for Education (UDISE), 2017-18 (provisional), 63.14% schools are having electricity connection.’⁵ In other words, roughly over four lakh schools don’t have electricity. The average camouflages the fact that barely a third of schools in Assam, Tripura, Odisha and Madhya Pradesh have electricity.

On 22 November 2019, Janardhan Singh Sigriwal, BJP MP from Maharajganj in Bihar, asked about the state of facilities at primary health centres.⁶ The response: 823 of the 25,743 primary health centres were functioning without electricity, with Jammu and Kashmir, Jharkhand, Uttar Pradesh, Rajasthan, Odisha and West Bengal being the worst performers. Each primary health centre is supposed to cater to around 30,000 people, which means twenty-four million or 2.4 crore patients at healthcare centres in rural India are being left in the dark. As per National Health Statistics, over 39,122 of the 1.5 lakh health sub-centres, or one in four sub-centres, don’t have electricity. Typically, it’s the patients from the poorest and most populous states – Assam, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttar Pradesh and West Bengal – who are suffering the most.⁷

The saga is familiar – pious intent followed by poor implementation. Lack of governance is evident through and through – in the poor allocation of resources, in the ignored flaws of implementation which then magnify, in the political populism of pricing resulting in poor cost recovery, in the very inadequacy of each grid being set up and in the loss of electricity due to the lack of systems upgrades. And yes, of course, that convenient fog over who is empowered to do what and who is responsible for what – accountability.



Flashback to 24 July 1879.

A summer evening in Calcutta. Bulbs flicker, they light up to illuminate the bungalow at Dharamtolla Street. Those gathered at this display of light are awestruck by the display set up by the bungalow's owner, P.W. Fleury.

A year later, the Great Eastern Hotel gets electric lights from the Indian Electric Light Company. The next lot of light demonstration is by Dey Sil and Company. On 30 June 1881, thirty-six electric lights are switched on at Cotton Mills, owned by Mackinnon and Mackenzie in Garden Reach, a desolate tract also known as Metiabruz, which once hosted Wajid Ali Shah, the exiled Nawab of Awadh and a pensioned guest of the British government.

Through that decade, ordinary Calcutta residents got used to the idea of electricity, even if only as a luxury for the privileged. By 1885, Dey Sil and Company were providing power at marriages of wealthy families and even at political rallies. In 1886, Nobel laureate Rabindranath Tagore sang at the Congress convention in Calcutta as it was lit up. ⁸ Around the same time, Dungar Singh, ruler of the princely state of Bikaner, installed electricity in his dominion and a dynamo plant was set up to electrify the home of Jamsetji Tata. In 1887, the house of the Maharaja of Darbhanga was lit up for Queen Victoria's jubilee celebrations.

The arrival of electricity in Calcutta was significant as Britain had just been introduced to electricity. Calcutta had status as the capital of British India with the residence of the influential Lord Curzon. Calcutta did have, though, its own little experiments much before this event. The first spark, so to speak, was witnessed in the 1830s at Calcutta Medical College when Prof. William Brooke O'Shaughnessy – known for his interest in botanical pharmacology and introducing the world to the medicinal properties of cannabis – used a steam dynamo to illuminate charcoal lights. In his memoir, O'Shaughnessy says, '... when a powerful battery current is directed through pieces of well burned charcoal, these ignite and shed a light of such brilliancy that it transcends every other mode of illumination.' ⁹

Electric power, for the people, was first spoken of publicly as a potential policy in March 1879, when Carl Louis Schwendler presented his paper at Calcutta's Asiatic Society on the economy, practicability and efficiency of the electric light for illumination, and the best means of its distribution. Schwendler, a German electrician born in Prussia's Torgan, had been supervising government telegraphs and was a passionate proponent of tungsten-based incandescent light. Schwendler was asked by the government of that time to examine the feasibility of electrification of Indian railway stations. He began conducting a series of trials, the first of which was at Howrah station. ¹⁰

Electricity formally arrived in India on Harrison Road. Kilburn and Company, now known as Calcutta Electric Supply Company (CESC), illuminated the road, making it the first on the subcontinent to be lit by electricity. The power was generated from dynamos set up at Halliday Pumping Station. The municipal consultant for this was the renowned scientist Jagdish Chandra Bose. ¹¹ Thereafter, to systemize the generation and distribution of electricity, the government brought in the Calcutta Electric Lighting Act, 1895. Kilburn and Co. got its first licence in January 1897 for twenty-one years, covering an area of 5.64 miles. CESC now covers 567 sq km. ¹² The Bank of Bengal and the Bengal Club were among the first to get electricity on trial.

To expand demand, the company began offering electricity to commercial establishments and industrial units. In April 1898, Kilburn and Co. proposed an electrified tram route on Harrison Road. ¹³ Trams were equine-drawn and a trial run with electric horse-power, instead of literal horse-power, was an interesting idea. But it was rejected by the Calcutta Corporation, as was another similar proposal by a tramways company. The concern was about reliability, since there was only one power generating station at that time. The Calcutta Tramways Company did manage to convince the powers that be and on 27 March 1902, the first electric tram travelled from Esplanade to Kidderpore. There were many among the naysayers who warned of the worst to tram passengers, but

technology did prevail and, by 1905, Calcutta boasted of 46 km of electric tram track.

The first hydroelectric power plant came up in Darjeeling in 1897. ¹⁴ John Willoughby Meares, a Winchester College graduate, was employed with Crompton and Co. when it entered into a contract with Crompton's Calcutta agents, Kilburn and Co. Meares was sent to Calcutta. He recalls, 'Very soon after my arrival in Calcutta, I was sent off to Darjeeling to go over the ground and draw up indents for everything required for the works I had to construct there...' All of twenty-five, he had little experience of hydropower, but would acquire far too much of dealing with poisonous snakes, typhoid, heat apoplexy, food poisoning, outbreak of plague, colleagues dying of smallpox and an earthquake. Meares nevertheless worked on getting water into 40,000 cubic feet storage on to a junction to propel the turbines. On 10 November 1897, C.C. Stevens, lieutenant governor of Bengal, inaugurated India's first hydroelectric power station as 130 kW flowed out of the plant located near the tea gardens.

The provinces began clamouring for the setting up of power stations. European companies began queuing up at government offices to set up plants. The demand curve was pushed up by mines and factories keen to raise productivity and by businesses and homes in the prosperous presidencies. In 1902, the Shivasamudram Power Station was commissioned by the Mysore government. Set up primarily to power the gold mines in Kolar, it also provided electricity to Bangalore and, via the Mettur receiving station, to Madras Presidency. In north India, two plants in Jammu and one on the river Chenab in Mohora began providing power to Srinagar and Jammu in 1909.

Electrification arrived in Bombay in 1882 with the municipality of Bombay contracting Eastern Electric Light and Power Company (ELPC) to first light up Crawford Market and then a few important thoroughfares. That glow was short-fused as ELPC went bankrupt, sending the city back to gaslight. In 1894, the municipality sanctioned funds for an electricity plant but by 1905 found the supply erratic, and Crawford Market once again reverted to gaslights.

The cliché ‘third-time lucky’ rang true in 1904. The British Electric Traction Company had been trying to enter Bombay through its agent Brush Electrical Engineering Company (BEEC) and received approval from the government of Bombay to set up shop. To facilitate operations, the company was called Bombay Electric Supply and Tramways Company (now known by its acronym BEST), which entered into a contract with BEEC to operate the Bombay Electric Licence, 1905. ¹⁵ This licence allowed for the right to supply electricity throughout the city. BEST set up a 4,300 kW generating station at Wadi Bunder, close to the port, or Dockyard as it was known. Soon enough, growing demand propelled sanction of a new, bigger plant near Kasara. ¹⁶

Electricity was also a passion for the grand patriarch of the Tata group, Jamsetji Nusserwanji Tata, who believed in ‘clean, cheap and abundant energy’ as one of the basics of economic progress. He also wanted to make Bombay a ‘smokeless city’. ¹⁷ The Tatas approached the authorities to set up a power company that could distribute power to bulk consumers, commercial establishments and industrial units such as textile mills. They got a licence that could be renewed every ten years.

J.N. Tata was keen on hydropower but did not live to see his dream. The Tatas made this dream of Jamsetji’s a mission. They designed and set up the necessary processes and infrastructure outside Bombay in the Ghats. Rainwater was collected, transported through ducts and stored in reservoirs. Using turbines, water power was converted into electricity and transmitted via the country’s first 100 kV line to a receiving station in Parel for onward distribution. As demand grew, the Tatas added additional generating units at Bhivpuri and Bhira, often meeting the shortfall in generation by BEST.

Although electricity first made its appearance in Bombay in 1882, the universalization of electricity came through only around July 1921 when electric streetlights came up across the city at junctions, resulting in inspiring and enabling stories of scholars who studied under street lamps. The government of Bombay also enacted new legislation, amending the original act and passing a new one in 1922 to enable new generation and distribution.

By 1926 there was enough capacity to promote the use of electricity. The challenge was to create demand during daytime so that the business model of power could be viable. But the cost economics of power production and distribution didn't lend itself to universalization. A unit of electricity cost a rupee, a princely sum for the time. Gas lighting was cheaper and a portable alternative. Electricity and its uses had to be promoted. One of the earliest advertisements, released by F&C Osler, announced that Kilburn and Co. was ready for 'installing of electric light in Calcutta for houses and commercial establishments'.

Persuading people to switch to electricity was a challenge elsewhere in the world too. In the US, companies sold lighting options as an instrument for women to improve the appearance of homes and themselves. Stage artists accepted in society and seen as trendsetters were early adopters. A General Electric advertisement for Edison Mazda lamps presented it as protection from 'grotesque colouring of lips and cheeks'. *Vogue* advised its readers to use lighting to make homes charming, as poor lighting led to the 'failure of many a dinner'. Advertisers decided that it's easier to sell lighting to improve looks than as a facility that improved sight. ¹⁸

Back in Bombay and Calcutta, the arrival of electricity led to the retirement of the manual pankah, which was replaced by ceiling fans, first in Calcutta at the bungalows of officials, followed by the Imperial Library and then in private homes. ¹⁹ Homes and shops lit with 8 W and 25 W incandescent bulbs were their own advertising for the product called electricity. But more needed to be done – companies held exhibitions, special presentations and even offered trials. In fact, in 1926, BEST opened a showroom at its office in Colaba, now known as Electric House, where appliances were displayed and the use of electricity was propagated by trained personnel. The event pleased the residents of Bombay. On 14 July 1926, a letter-writer to the *Times of India* welcomed the 'arrangements that are being made by the same concern to convert the poor men's cottages into prince's palaces'.

As Independence approached, India generated barely 1,362 mW, had transmission lines covering 23,238 km and the per capita consumption was at 16 kWh. Electrification – for agriculture, for

industrialization, for the progress of a nation just born – was imperative. Netaji Subhas Chandra Bose, then Congress president, speaking at the first meeting of the All India National Planning Committee in Bombay on 17 December 1938, said, ‘In the matter of electrical power particularly, India’s backwardness can be gauged from the fact that while in India we have at present only seven units per head, a backward country like Mexico has ninety-six and Japan about five hundred.’ [20](#)

In the run-up to Independence, the committee devoted considerable attention to planning the way ahead for electrification. The report on rivers, irrigation and electricity – authored by a committee chaired by Nawab Ali Nawaz Jung Bahadur, chief engineer of the Nizam of Hyderabad, and steered by U.N. Mahida, chief engineer of Bombay and later a member of Swatantra Party – stated bluntly: ‘When it is remembered that power is at the root of our modern-day industrial organization, and that comparison between the indices of electricity production and the earning capacity of the people reflects the economic prosperity of a country, the great backwardness of India is evident.’ [21](#)

The committee laid out a blueprint on production and distribution of electricity. The doctrine laid out was: ‘If electricity is to serve its purpose of raising the general standard of living, its main application has to be in the rural areas, where it should go to aid production and procure for the grower better value for his produce.’ It observed that electricity was expensive because it was not widely used and needed its democratization since ‘if power were limited, [it] would have no commercial value’.

As one of the initiatives to manage the economics of power production, the committee referred to the success of Sweden in harnessing hydroelectricity and the cost advantages of using water to harness power, and promoted the development of hydropower as the most viable option for farming, mining, industry and homes. It also laid out a grid for a mix of power from different sources and the creation of provincial electricity boards.

Among the people who recognized the absolute importance of electrification was Prime Minister Jawaharlal Nehru. His interest in irrigation and power projects had taken him to Tennessee Valley and

set the stage for the Bhakra and Damodar Valley projects. He was impressed by the model in the Soviet Union, particularly after it had humbled Germany in World War II.

He believed in the Harrod–Domar model, authored by economists Roy Harrod and Evsey Domar, who advocated that in a labour-surplus resource-starved economy, the state must take the lead in investment to foster growth. Speaking in Parliament in May 1952, Nehru stressed on the importance of electrification and said, ‘Industrialisation has been measured by the amount of electric power a country can produce.’ To underline his point, he recalled a quip by Lenin, stating that ‘communism is Soviet Russia plus electricity’. [22](#)

It followed that the role of electrification would find prominence in the First Five-Year Plan, which highlighted the need for power for industry, agriculture and homes. The plan divided the sources of generation into exhaustible sources of coal, peat, natural gases and inexhaustible sources like water, wind, solar and tides. The emphasis was on hydroelectric power. A 1919 draft and the 1921 final report had ‘indicated a minimum continuous water power potential in India of 3 to 5 million kW’. The planners, though, believed the potential was higher and called for fresh surveys. The allocation for irrigation and power was Rs 561.4 crore, a whopping 27 per cent of the total allocations of Rs 2,078 crore.

Electrification was crucial for economic development and it also became true for political sustenance. At the first National Development Council meeting held on 8 and 9 November 1952, chief ministers of resource-rich states asked for central assistance to set up power projects. Ranga Reddy, minister for public works in Madras, suggested that the Centre hike spending on power projects and even mooted deficit financing. Coorg Chief Minister C.M. Poonacha urged for the inclusion of a project of Rs 2 crore in the Five-Year Plan ‘for generating 47,700 kW of power, of which 36,000 kW could be supplied to Madras and Mysore. Orissa Chief Minister Nabakrushna Chaudhri asked that resource-rich states – MP, Orissa, Assam – be also assisted in industrial development so power from projects like Hirakud could be fully utilized. [23](#) While

suggestions and demands flowed at a fast pace, implementation lagged.

There was a clash of objectives and ideology. Speedy implementation required the import of machinery. The aspiration of self-reliance required them to be made in India. At the third NDC meeting on 9 November 1954, Nehru said, 'We must aim at producing machines, the basic things here. We have to get them from abroad to begin with but we should not go on getting them, we should build them here.' And then went on to say, 'The two things most essential perhaps are power and speed, among other things.' [24](#)

There was the conflict of competing objectives and then there was the conflict of competing compulsions in the allocation of resources. At the end of the first plan in 1957, India had an installed capacity to generate 2886 mW electricity. There was no democratization of electricity; only 7,294 of 5.62 lakh villages had electricity and per capita consumption was 31 kWh. Political attention resulted in optical changes in the second plan. The allocation for power was brought out of the allocation for irrigation and shown separately at Rs 426.8 crore. There was a re-jigging of the optics of political priority with the chapter on irrigation and power being brought front-of-book, from twenty-sixth to seventeenth. By 1961, the government had spent Rs 594 crore, taken generation capacity to 4,653 mW and the number of villages electrified rose to 21,754. The pace was yet slow.

By the third plan, the romance of hydroelectric was overtaken by political realities. If necessity is the mother of invention, demand is the deity of discovery. The planners realized that the 'installation of large thermal units employing higher steam temperatures and pressures would result not only in increased thermal efficiencies but also in reduction of capital costs per kW of installed capacity.' The plan proposed leveraging coal reserves located in resource-rich states and gas from refineries for thermal power plants.

The plan also upped the ante on nuclear power. It opted for uranium, even as it recognized the potential of using thorium. A tonne of uranium could deliver as much power as 11,000 tonnes of coal and the first nuclear power station with two reactors of 150 mW each was proposed at Tarapur, near Bombay. The third plan

also urged research on alternatives such as tidal, wind and solar power for electricity generation. Hydropower continued to be on the agenda but the outlook for thermal power at 7,000 mW overtook hydro.

All these plans and permutations, however, were not impressing or impacting ordinary lives. Two NSS surveys illustrated this. In 1963-64, average consumption of electricity was 0.03 standard units in villages and 0.74 units in urban areas. The total expenditure on fuel and light per person was Rs 1.40 in rural areas and Rs 1.88 in urban areas, of which the expense on electricity was estimated at Rs 0.01 in rural India and Rs 0.20 in urban India. Firewood was the chosen fuel in combination with kerosene – 0.20 seers and 0.57 seers in villages and between 0.23 seers and 1.52 seers in towns – and usage of cow dung was high in Punjab and West Bengal. Significantly, the survey also reported the use of matchsticks – up to sixty-seven in rural areas and 102 in urban areas. [25](#)

The promise was to liberate rural India from firewood and dung. A decade later, in 1976-77, NSS surveyed the use of electricity and diesel. [26](#) Barely 7.7 per cent of all rural households used electricity for lighting. About 2.5 million households possessed appliances – fans and radio – and the average expenditure was Rs 10.94. The survey found fifty-two lakh irrigation pumps in use across the electrified villages, with nearly half using diesel since electricity was not available. And even when a village was electrified, the farmers refused to convert their diesel pumps as supply was not reliable. Governance had missed goals, targets had not been met and projects were running behind schedule, leading to power cuts and load shedding.

It didn't get any better over time. Between 1956 and 1980, even though the government raised generating capacity from 2,886 mW to 28,448 mW, barely 11 per cent of farmers used electricity. The sixth plan, in 1980, observed that 'with 80 million work animals and 44 million plough shares, animal power still provided the overwhelming share of draught energy in agriculture, per capita consumption was at an abysmal 172 kWh or a tenth of global average, over half the 5.6 villages in the country continued to be

without electricity and only 14 per cent of all households had electricity.’ [27](#)

By the mid-eighties, enthusiasm for the ideology of a ‘socialistic pattern of society’ had worn thin, along with public tolerance of inadequacies. On her return to power in 1980, Prime Minister Indira Gandhi, who had decoupled from the left parties, made a significant right turn. The country had to approach the International Monetary Fund (IMF) for a credit programme driven by the chaos of the Janata government and the precarious state of the economy. The context resulted in the reversal of political and economic policies. She met Ronald Reagan to put together a technology agreement and chose to import aircraft from France and Britain instead of the USSR. She also realized that delivery on promises, particularly electrification, required a shift from the government-knows-all approach to opening up segments of the economy for private sectors.

At the thirty-fifth NDC meeting held on 13 and 14 February 1981, chaired by Indira Gandhi, the common lament of ministers and chief ministers was the paucity of resources in achieving targets set by the Five-Year Plans. Karnataka Chief Minister R. Gundu Rao underlined the need for power and mooted an idea antithetical to Congress thinking. He said that ‘captive power units should be permitted wherever private sector came forward with its resources for the construction of such projects’. Gundu Rao was a protégé of the Congress ‘high command’ and, being close to the prime minister’s son, Sanjay Gandhi, he had disruptive power which could alter the status quo in policy and politics.

His suggestion for allowing private players and their participation in power projects didn’t get a response from either the finance minister or the power minister. Then, when Indira Gandhi spoke at the end of the NDC meeting, she presented the change in perspective with a strategic observation: ‘The socialist countries such as even China, which many of our leftist friends considered as their model, were openly welcoming foreign investment, technology and inviting multinationals. [. . .] Our socialism was a logical development of the concept of democracy, suiting the requirements

of our system. It was built on the mobilization of private initiative for the greatest good of our society.’

It was the unlocking of the gates for the thought process to induct private players. It’s not as if there had been no private participation earlier. The first renewable energy plant, which had been set up in 1901 in Bombay, had used biogas produced from the treatment of sewage to light up Matunga and the nearby Wadala areas. [28](#)

The Seventh Five-Year Plan restated Indira Gandhi’s intervention. ‘In a mixed economy such as ours, the programmes of investment embodying the pattern of allocation laid down in the plan are to be implemented both through direct public sector outlays and through influencing and regulating the flow of resources to the private sector.’ There was an emphasis on the need for policies ‘which lead to efficiency and economy in resource use in both the public and the private sectors’. While the directional change was welcomed, there was scarcely any investment by the private sector in the power sector.

By 1991, India’s population had touched 846 million. It had the capacity to generate 63,836 mW, but the usage was lopsided. Urban areas, which constituted 24 per cent of the population, consumed 80 per cent the energy. Over 1.1 lakh of the 5.8 lakh villages, or one in five, were yet in darkness. Worse, as the Seventh Five-Year Plan observed, ‘Although 64 per cent of villages were electrified, only around 8 per cent of rural households are using electricity.’ [29](#) This was because out of the 169 million households, barely 13.52 million were connected – effectively, over 770 million were off the grid or could not afford to use electricity. [30](#)

At one level, the government was finding it hard to fund new power plants and transmission and distribution lines to deliver electricity to people. At another level, the government struggled to recover costs. The question of recovering the cost of power from farmers and, to a certain extent, domestic users was a political hot potato.

On paper, the Electricity Supply Act, 1948, authorized state electricity boards (SEBs) to fix the price and collect it. The act envisaged that SEBs would function professionally. The economic model was based on an assumption that a minimum return of 3 per

cent on capital would enable maintenance and investment in the sector. Losses, if any, incurred by SEBs due to government policy were to be reimbursed by the state exchequer. In practice, SEBs were run politically, not professionally. The combination of political pricing and unpaid dues sent the SEBs deep into the fiscal hole.

By the end of the sixth plan, commercial losses of the SEBs were Rs 4,472 crore, estimated to be roughly around 0.7 per cent of the GDP then. In 1991, revenue recovery was 79 per cent and over a fifth of power generated was lost in transmission – distribution and plants ran at barely half or 54 per cent of capacity and ‘peak and energy deficits were 7.7 per cent and 18.8 per cent, respectively.’ ³¹ The chapter on financing the Seventh Five-Year Plan, cleared by the Rajiv Gandhi regime, revealed ‘commercial losses of the state electricity boards over the seventh plan period are expected to amount to Rs 11,757 crore at the existing rates of tariff’. ³²

The system was constantly short-circuiting but the politicians weren’t interested in redoing the base-wiring correctly. The absence of funds and ambiguity in pricing policy led to aggravation of finances. Thanks to the losses, maintenance of plants and investment in transmission and distribution infrastructure suffered. The regime of cross-subsidies drove industrial customers of SEBs to set up their own ‘captive’ generation plants, both for better costs and reliability. This resulted in the loss of market share – SEB’s share of electricity consumption by industry slid from nearly 65 per cent to about 40 per cent. ³³ The loss of income from paying customers worsened the financial stress.

The cohabitation of structural inefficiencies and political denial about the cost of profligacy worsened the stress on public finances. And it wasn’t as if public expectations were being met. Seven Five-Year Plans later, barely one in four rural households had been electrified in 1989, with less than ten per cent of rural households in Bihar, Uttar Pradesh and West Bengal having access to electricity.

The failures of the state were spelt out in December 1991 by Biju Patnaik, Orissa chief minister and a giant of his time. He called out the system, pointing out that the administration evolved under the act of 1935 had ‘landed 45 crore of our people below the poverty line’ and said, ‘A hard look is needed at what the government spent

on and how.’ The NDC decided that Patnaik would chair the NDC committee on austerity. The committee was asked to identify trends and causes of growth in government expenditure, where expenditure can be reduced and suggest changes in policy to reduce the cost of subsidies and government borrowings. [34](#)

Newton’s law states that bodies continue to be in a state of rest unless acted upon by an external force. This holds true for public policy too. Status quo persists until crisis brings change in its wake. The 1991 balance of payments crisis delivered the required precipitation and propulsion. The crisis necessitated a bailout from the IMF, which came with strings attached. These included pledging of gold reserves with the Reserve Bank of India (RBI), devaluation of currency and the dismantling of the licence raj, which meant deregulation of sectors. The 1991 budget speech presented a strategic spin to justify the end of the licence raj with political articulation of the IMF’s conditionalities. Manmohan Singh, then finance minister, said reforms to impart efficiency and dynamism required an increase in competitiveness and advocated ‘foreign investment and foreign technology to a much greater degree than we have done in the past’. He then declared that ‘after four decades of planning for industrialization, we have now reached a stage of development where we should welcome, rather than fear, foreign investment.’

Following the declaration, the government amended the Electricity Supply Act to allow private foreign participation in the generation of electricity. The 1948 act, which drew upon the mother law of 1910, had been fine-tuned numerous times – in 1956, 1959, 1966, 1976, 1978, 1984, 1984 and so on – to fix chinks and to enable political expediency, but it always dissuaded private participation. In a stark departure from previous occasions, the Electricity (Supply) Amendment Act, 1991, enabled entry of Indian and foreign private sector companies to set up and operate power plants with no restrictions on size as long as the entity entered into a power purchase agreement with the SEBs. The opening up of the sector was received with bouquets and brickbats. It had its share of politics as well as polemic and public interest litigation.

In its eagerness to woo investors the government laid out the red carpet to independent power producers. These included 16 per cent guaranteed returns on equity invested if the plant delivered set plant-load factors, a five-year tax holiday, tariff that split fixed and variable costs, a low-equity requirement, fast-track clearances and revenues backed by counter-guarantees. While power is a concurrent subject under the Constitution of India and the investment agreement was with state governments, the guarantees had to be issued by the Centre.

The generous terms drew foreign companies to tie up with Indian associates to bid for projects. These included National Power UK that tied up with Hinduja Group, Electricite de France and General Electric Company UK with Ispat Group, Enron, Applied Energy Services aka AES, Congentrix and CMS Energy from the US besides China Light and Power. The rush triggered a lobbying race among companies and states to secure the counter-guarantee. Among the ventures queuing up for fast-track status were Dabhol Enron, Bhadrawati Ispat, Jegurupadu GVK, Vizag Hinduja Ib Valley AES, Neyveli CMS and Mangalore Congentrix. [35](#)

In October 1992, Sharad Pawar, then chief minister of Maharashtra, wooed and got Enron and Bechtel (with Maharashtra State Electricity Board holding a 25 per cent stake) in a project called Dabhol Power Company, near Ratnagiri in Maharashtra. Although they – the Houston-based giant, with flamboyant Rebeca Mark as the chief and Joseph Sutton as vice chief – were ranked highly by rating agencies, perception about the company was less than kosher.

The left and the right both railed against the project. Congress MPs in the Parliamentary Committee on Energy and Pawar's rivals in the state covertly and overtly opposed the project. The venture and the agreement between the Maharashtra government and Enron raised many questions of propriety and process, right from the clearance by the Central Electricity Authority to operating costs to tariff to the manner of funding. In theory, foreign investment is seen as inflow of dollar resources to build infrastructure. The opponents objected to Enron raising funds in India via the Dabhol Power Company. Not everything was right with the new power policy and

Enron came to symbolize everything wrong in it – everything that was against national interests.

The critical factor for viability in any power project is balancing cost of generation and distribution by recovering cost from consumers. One of the sticky issues was raising tariff. Companies were to generate power and supply it to SEBs, which would then wheel it for distribution. Commercial sustenance required that the terms agreed under the policy allowed revision of tariff. This raised political hackles and resistance within the Congress party and the opposition, particularly since the revision of tariff would hurt the key political constituencies of farmers and domestic consumers.

By 1994, the opposition had acquired mass attention. Besides a flurry of opinion pieces and reportage by newspapers, there were also public interest litigations (PIL). Ramdas Nayak, a BJP legislator, filed a PIL asking for the deal to be cancelled. Gopinath Munde, then leader of the opposition in the Maharashtra assembly, took to hyperbole and declared that ‘the Enron project will be drowned in the Arabian Sea once the Shiv Sena–BJP alliance comes to power’. And the saffron alliance did dump the project when it came to power in March 1995 – if only to renegotiate and agree to a larger project.

The Enron episode led to the unravelling of the policy and the lessons drawn from the Maharashtra experience found echoes across the country. The fallout of mass mobilization and political action in Maharashtra, the defeat of the Congress in several states in assembly elections and the clamour against corruption at the Centre led many to rethink the contours of the policy.

The market telegraphed a parallel set of facts. Internationally, prices of power equipment fell and renegotiation became the operative political phrase of the time. Over 180 investment offers for the generation of 75 gW and investments of around \$100 billion had poured in following the opening up of the sector in 1993 and ninety-five projects had signed memorandums of understanding (MoU). By 1998, barely two of the fast-tracked projects were ready to produce power. Big-bang reforms turned out to be a damp squib. The eighth plan had targeted an addition of 40,000 mW, but only 17,000 mW could be added. [36](#)

The downward spiral from euphoria in 1993 to despair in 1998 was kind of in the script. The financial condition of SEBs was always a sticky issue in any agreement between investors and the government. Getting access to consumers required agreements with the SEBs, which controlled over 70 per cent of the market. And eighteen of the nineteen SEBs were making losses. Leave alone the grand returns promised, investors, looking at the left and right side of the balance sheet, did wonder if they would even recover the costs.

Aggravating the stress in the sector was a surge in political profligacy – the discovery of a new instrument for ensuring favourable electoral outcomes. Since Independence, state governments had intervened to keep the cost of power low for farmers and even written off dues. A quantum change in approach in the 1997 assembly polls made it worse. The Akali Dal in Punjab announced free power to all the farmers. This was meant to improve the incomes of farmers who had to pay to pump groundwater to irrigate crops. The move paid off electorally but left the state finances with an ever-deepening and widening hole.

Soon enough, other states followed suit. In Maharashtra, the major parties had an unwritten agreement to desist from promising free power. However, in October 1998, Shiv Sena chief Bal Thackeray announced free power. By the assembly polls of 1999, every party had announced free power in its poll promises. The structure of governance, with a preference for political rather than professional management of commercial entities, enabled parties to leverage their majority to extract rent.

The deterioration of SEB and state finances is illustrated by the Punjab experience. In 1995-96, before the free-power regime kicked in, it cost the state Rs 919 crore to supply power. It recovered a partial cost of Rs 226 crore. In 2001, it cost the state Rs 1,659 crore to supply power and the recovery was zero. In effect, the cost of subsidy went up from Rs 693 crore to Rs 1,659 crore – from Rs 901 per cropped hectare to Rs 2,089 per hectare. The worsening of soil nutrient levels and salinity were unquantified additional costs. ³⁷

To restore sanity, to firewall costs and in the hope of addressing the politicization of power tariff, the Government of India passed

the Electricity Regulatory Commission Act, 1998, to institute a professional and objective system to regulate electricity tariff. This led to the creation of the Central Electricity Regulatory Commission and ERCs across states. Changes followed. The 1993 instrument of luring investors – namely, counter-guarantees – was dumped. Power pricing had to be sanctioned by the regulatory commission, so private generating companies could not force the offtake of expensive power where lower cost power was available. Tariff subsidies or exemptions were to be reimbursed by the states.

The institution of the mechanism brought transparency and allowed public engagement. The problem of profligacy, though, was not resolved. It simply assumed another form. State governments let dues remain unpaid and the burden of costs in the form of losses and debt was parked on SEB balance sheets.

A parallel development in policy contributed to worsen the state of SEBs. Following the opening up of the sector, the government moved an idea it had flirted with in the Sixth Five-Year Plan. On 9 October 1995, P. Abraham, the power secretary, wrote to chief secretaries of all the state governments. The letter revealed that India, already facing shortage, could, by the end of 1996-97, face more energy shortage of ‘15 per cent and peaking shortage at 30 per cent.’ ³⁸ The answer, therefore, was to look at options. Abraham wrote, ‘Captive power plants offer such an alternative.’

Industry was only too eager to exit outage-country – escape power outages and cuts – and adopted the captive power plant route in a big way. In Pune, an industrial and IT hub, companies facing a major power shortage came together and crafted the Pune Model. The companies pooled surplus power from captive power plants and wheeled it to the grid to provide reliable power, with users paying an additional reliability charge to recover costs. ³⁹ This power was also shared with outage-hit domestic consumers in the Pune distribution circle.

At the dawn of Independence, there were a handful of captive power plants, also known as non-utility plants, with a capacity of 544 mW. By 2002, captive power plants were producing 17,094 mW – roughly, a fifth of the power generated in India.

The loss of the creamy layer of customers added to the misery of SEBs. By 2001, the fiscal landscape of the energy economy had considerably worsened. A committee of the Planning Commission examined the health of SEBs. ⁴⁰ The findings signalled grave implications for the energy security of India. The average cost of supply of electricity had gone up from Rs 2.16 to Rs 3.50 during the period from 1996-97 to 2001-02. The average tariff realized by SEBs was Rs 2.40 while cost of supply was Rs 3.50, resulting in a loss of Rs 1.10 per kWh ab initio.

SEBs priced power to farmers at 42 paise and to domestic consumers at Rs 1.96. To bridge the gap between cost and price, SEBs extracted higher tariff from industry/business and their share in total energy sales was shrinking. In effect, only 22 per cent of the consumption was fully paid for while 50 per cent of the supply was subsidized. Add the fact that SEBs could not realize revenue for twenty-seven of every 100 units supplied due to transmission and distribution losses, a euphemism for leakage and theft.

The consequences visited the balance sheets of SEBs and state government finances. Subsidies mounted in the five-year period – from Rs 4,386 crore in 1996-97 to Rs 12,238.5 crore in 2001-02 on account of cheaper power to domestic consumers and from Rs 15,586 crore to Rs 30,462 crore for power supplied to farms. The committee estimated, assuming state governments had paid their share of the subsidies to SEBs, commercial losses had shot up over five times from Rs 4,674 crore to Rs 24,837 crore in five years. Clearly, no business is sustainable if only a fifth of the consumers pay full price, households get subsidized power, farmers get free power and nearly a third of the output is line-jacked by katiyas, the moniker for hook-line power thieves.

The chasm between cost and pricing widened the gap between demand and supply. The phenomenon of being wired but not connected to power is widespread even today. Bar South Mumbai (which is ‘islanded’ from the rest of the state), no city in India can boast of reliable 24x7 power connection. SEBs declare scheduled power cuts – for instance, Pune has scheduled shutdowns the whole day on either Wednesday or Thursday and shops close for business accordingly if they can’t run on generators and other back-up. These

power-cut days are the ‘official’ ones; unscheduled power cuts can take place anytime, anywhere in the country and can last for minutes or hours, sometimes so long that even home inverters are depleted. Think about those Indians attempting to run businesses involving fresh and frozen foods, be it supermarkets or restaurants, and the food spoilage due to lack of power, or that small shop at the nakkad, with its investment in a copier and printout machine which can’t work because there’s no power. Collectively, the political class couldn’t care too much about them; since they do not fit the categorization of poor, they are the middle class and not a vote-worthy constituency.

In 2002, India had the capacity to generate 1,05,046 mW, up from 1,362 mW in 1947. It is not that money was not spent. Indeed, between 1951 and 2002, the government allocated Rs 2.98 lakh crore and eventually spent over Rs 2.88 lakh crore. [41](#) However, even hundred years after the introduction of electricity in India, more than 80,000 villages were yet to be electrified.

As per the Census 2001 data, of the 138 million rural households, about 78 million were un-electrified. And even those that had electricity suffered frequent power outages as India’s energy deficit was at 7.5 per cent and the peak deficit was at 12.6 per cent; it was expected to worsen at 11.6 and 9.5 per cent. In 2002, Indians’ per capita consumption at 411 kWh was nearly one-sixth of the global per capita average of 2,432 kWh. [42](#)

The conversion of ‘poor men’s cottages into prince’s palaces’ was yet to be.

* * *

Necessity is the accelerator of technology dispersion. The etymology of the term ‘inverter’ stems from the evolution of technology. As early as 1892, rotary converters were used to convert alternating current into direct current. Ernst Frederick Werner Alexanderson, an engineer better known for designing the long-wave radio transmitter, which made it possible to modulate audio over radio waves, migrated from Sweden to America in the early 1900s and began working for General Electric. In September 1921,

he conducted an experiment using a rectifier he designed to produce direct current of 10 kV, which was then transformed to alternating current.

Although Alexanderson called the process ‘inverted rectification’, the device came to be known as an inverter, thanks to the work of another engineer, David Prince. In 1925, Prince presented a paper titled ‘The Inverter for GE Review’. He liked the idea of using something from German since he found the language ‘pithy’ – Stromrichter, a current converter; Umrichter, a cyclo-converter; Gleichrichter, a rectifier; Wechselrichter, an inverter. He decided the inverse rectifier would be called the inverter. It was the simplicity of a single phrase that made ‘inverter’ the generic term across languages as well as the world by the thirties.

Inverters came to India, unsurprisingly, because of power failure. In 1976, a Japanese company executive in Calcutta couldn’t bag a valuable contract because of a power cut. He spoke with S.K. Roy Choudhury, an assistant engineer with a graduate degree in science (electronics), to ask if a telex could function even during an outage. Choudhury recalls that he got enthused by the question: ‘I started thinking about whether it would be possible to charge the battery and convert DC into AC during a power cut.’ ⁴³ Two years later, he set up GP Tronics, to produce ‘a product called an inverter with a capital of just Rs 4,700’. GP Tronics went on to mass produce uninterruptible power supply (UPS) and inverters, and Choudhury built a business to provide instruments and services for reliable and alternative power sources.

In the early days, the need for inverter/UPS was based on the opportunity cost of time. The first adopters were business houses, governments and public sector enterprises as continuous process requires reliable and uninterrupted power supply. Beginning with the eighties, as young Indian techies set up companies to enter the software exports’ domain and development of software for time-conscious international clients, the need for back-up systems acquired added importance.

Just around this time buildings in India were beginning to grow vertically; gone were structures of two, three or four storeys as taller ones began to rise into the sky. Lifts and elevators became a part of

these tall buildings and assured power supply to run them was necessary as no one would invest in a high-rise apartment and climb up and down stairwells if there was no power. Developers of residential and commercial projects began promoting ‘dependable back-up’, with the promise of 24x7 electricity, especially in the tier-II cities of Bangalore, Pune, Hyderabad and the national capital region of Delhi, Gurgaon and Noida. Soon enough, other cities followed suit.

Post 1991, policy allowed 100 per cent foreign direct investment (FDI) in the manufacture of generator sets and this spurred output in portable sets. The adoption of diesel gensets (DGs) as back-up systems for every kind of need – whether it was lighting up an apartment or keeping shops running in a mall – grew rapidly. By the late nineties, a new segment joined the demand queue – the telecom service providers. Rising mobile connectivity meant adding more towers and towers needed power. Besides telecom, the demand for DG sets continues to be driven more so today by the hospitality sector, healthcare centres, commercial complexes, petrol stations and large industries.

The range of DG sets in the market – from 15 kVA to 750 kVA – reflects the width of the problem and the need to beat outages. The key players include Caterpillar, Cummins, Greaves Cotton, Kirloskar Oil Engines, Mahindra Power, MTU, Volvo Penta and Ashok Leyland. The impact of the rising adoption of back-up systems is manifest in the data on consumption of diesel. Consumption of diesel grew from 10.5 million tonnes in 1981 to 37.9 million tonnes in 2000 and spiralled to over seventy million tonnes by 2012. [44](#)

A large part of this is used by captive power plants. Indeed, the capacity of captive power plants (1 mW and more) shot up from 22,335 mW to 50,288 mW in just ten years from 2007 to 2017, and now accounts for a sixth of India’s generation capacity and thirteen out of 100 units of electricity generated. [45](#)

Urbanization in India is, it would be safe to say, amoebic; the largely unplanned and haphazard expansion of cities takes place around the availability of land. The sequence of urbanization is led by builders who buy tracts of land in uninhabited areas – roads,

water, drainage and electricity follow, and when they do, it's erratic. The provisions are inadequate and such ad hoc-ism nurtures the market for solutions.

The solutions to bridge the chasm of denial, created by poor public policy and non-implementation, have given rise to entrepreneurs and their stories across sectors. Remarkably, many of these entrepreneurs are from humble middle-class backgrounds, bitten by the bug to not only solve a problem but also invest in new ways of designing business solutions to old problems.

Rakesh Malhotra, son of a civil servant, who studied electronics and telecommunication at Jadavpur University, had first-hand experience of the poor state of power supply in his hometown Delhi and elsewhere. Sensing the scope of opportunity, Malhotra, who had worked as an engineer at Nelco and later at Mitsui and Siemens, invested around Rs 40,000 of his own savings to set up a company to manufacture power back-up equipment – inverters and more – under the brand name 'Luminous'. His first inverter was out in the market in 1991. By 2000, Luminous was among the leading suppliers in India and had expanded to produce its own batteries. Luminous, through a chain of 70,000 dealers, has sold power back-up systems – UPS, inverters and solar inverters – to over seventy million customers in India and abroad. [46](#)

Kunwer Sachdeva started his entrepreneurial journey at the age of fifteen, selling pens with his brother, often on a cycle. When cable television took off in India, Sachdeva set up a cable communications outfit in Delhi and witnessed the worsening of power supply and frequent outages which also dented his business. 'Delhi was in especially bad shape,' he says. 'It was an opportunity to look at a new business.' One morning, Sachdeva decided enough was enough. He got the inverter he had at home and opened it up. 'I found it was a case of how not to do things. On making enquiries, I discovered most companies were sourcing inverters from Kolkata which were technically and aesthetically of poor quality. I used to think selling was my speciality but got involved in design and engineering.' He and his team improved on the inverter by sourcing components and assembling a few pieces. The pieces would keep failing and then they would also fail to charge again thanks to the

poor quality of power supply. Sachdeva thought about those in the western world who used inverters for recreational purposes and on campers. He and his team studied those inverters and eventually, by the end of 1997, they had what they felt could be branded and put in the market as Su-Kam. Nope, he doesn't remember how he hit on the name.

By 1998, Su-Kam inverters were in shops. The devices required after-sales servicing. The challenge came with new learnings – for instance, inverters were also a favourite with illegal wire-tappers who would steal power and use inverters to store and then supply to buyers. Su-Kam filed many patents for its innovations, introduced home UPS, inducted embedded software for remote servicing, set up a battery production unit, touchscreen and WiFi-enabled units and went into solar inverters in a big way.

‘This building where I work from is powered by a 250 kV solar-hybrid system,’ he says. ‘Realistically, a system costing around Rs 2 lakh can power everything at home and a family can be insulated from the vagaries of power supply.’ By 2015, Su-Kam was selling nearly two million inverters a year. Sachdeva hadn't quite anticipated Su-Kam would do as well as it did: ‘I saw the opportunity, but did not quite visualize the magnitude of the need and demand.’

The original flagship product of Microtek International when it started in 1989 was black-and-white monitors. As it moved up the value chain to personal computers and peripherals, it discovered a thriving demand for power back-up systems. Beginning with external battery UPS and inverters in 2001, Microtek was producing a million units by 2006 and trebled its output to three million inverters by 2014. The company has over 25,000 distributors and claims ‘over 11 crore smiling customers’. Like Luminous, Microtek also exported across the world to developing economies and markets. The growth stories of Su-Kam, Luminous, Microtek, GP Tronics, TVS Electronics, Genus, Emerson, APC and Numeric Power represent the gap between what is and what must be. Today, in peri-urban and urban India, it would be a challenge for any decent developer to sell a flat without the provision of inverters.

The rise in adoption hosts an instructive lesson for policy-makers. An inverter could cost anything between Rs 5,000 and Rs 20,000; the running cost of electricity from inverter and battery systems is about Rs 20 per kWh, way more than the cost of grid-based conventional power. ⁴⁷ That has not deterred consumers, who see it simply as the cost of assured power and the price of public failure.

Even as urban and peri-urban India plug into paid-for private solutions, across remote hinterlands, not-for-profit organizations are trying to provide solutions to rural folks. Residents of Gangapur village in the Samastipur district of Bihar owned mobile phones but did not have electricity; thus, charging the phones was a problem. They could either travel 5 or 10 km to a nearby electrified village themselves or they could pay to get their phones charged there by handing them over to either the local grocer who went there for supplies or to people who did just this – collect phones and then return them post-charge for a fee. The village made do with kerosene lamps and the eye afflictions caused by the fumes.

Enter two young men charged with a desire to bring change. Ajay Kumar (twenty-three) and Somil Daga (twenty-four) – engineers from the Kalinga Institute of Industrial Technology, Bhubaneswar, and Vellore Institute of Technology, Vellore – declined job offers and joined the State Bank of India Youth for India Fellowship. ⁴⁸ Their goal was to bring electricity to thirty-five families of the Musahar community in Gangapur. The duo explained to the villagers that they could have electricity using solar panels. It took the villagers, who had never heard of such a thing, time to believe and accept this.

Once they did, Kumar and Daga set up a decentralized solar-lighting system. The cost of the solar panels was crowdfunded. Frugal costing and innovation showed it would cost around Rs 8,000 to set up a solar system to light four lamps for ten hours. This provided each house with one or two lights and a mobile-charging point. The villagers agreed to pay Rs 40 per month for maintenance.

The idea of using decentralized or off-grid solar solutions can be found across India. Fellows at the SBI Youth for India Fellowship have also crafted solutions in Rajasthan, Karnataka and Bihar – from home-lighting to digital schooling to solar cookers, and

implements for farming and post-harvest processes. SBI has also enabled a youth-energy entrepreneurship programme, empowering the local populace to earn and serve at the same time.

Initiatives have been both institutional and individual. Michael Aklin and his colleagues from Pittsburgh University's department of political science set up off-grid solar-power systems as Mera Gao Power (MGP) in eighty-one randomized non-electrified habitations at a monthly cost of Rs 100 (which was 2 per cent of the household expenditure). MGP provided 'basic level of electricity access, comprising bright domestic lighting [through two light-emitting diode lights] and mobile charging [points].' ⁴⁹ The aim of Aklin and his team was to understand the socio-economic effect of making electricity available.

Project Chirag, an initiative of Mumbai-based HR College students in free enterprise, started with providing lamps to children in Ujjaini in the Thane district of Maharashtra. Since 2010, it has expanded and covered over 10,000 households, lighting up lives in seven states – Maharashtra, Rajasthan, Karnataka, Uttar Pradesh, Uttarakhand, Assam and Meghalaya – reaching out to people in remote areas, like Aruna Chapor, located on a sandbar in the Brahmaputra river. ⁵⁰

Villagers of Rajanga in Odisha had lived in the fear of darkness and rampaging wildlife, including wild elephants from the nearby Kandhara Reserve Forest, most of their lives. In Odisha and Meghalaya, solar microgrids – supported by The Energy Research Institute (TERI), De Montfort University, UK, and local self-help groups – have lit up homes and community centres besides powering water pumps and post-harvest machines. ⁵¹ Sachin Dhande, a mechanical engineer, and his friends set about distributing solar lamps to the poorest of the poor in the drought-hit districts of Beed, Osmanabad and Latur in the Marathwada region. ⁵² The group not only distributed lamps but also taught local youth to assemble, distribute and maintain the lamps. The idea was to liberate the people from the curse of kerosene for a price they were happily willing to pay.

There is still a deep, wide need. To get a perspective on the need and demand for private power back-up, Google the word ‘inverter’ and, in less than fifty-two seconds, the search engine throws up about 20,00,00,000 results. A search for ‘home inverter India’ throws up 5.5 million results, ‘inverter suppliers’ generates 27.7 million results and ‘India inverter manufacturers’ gives you 7.1 million results. It is estimated that between the organized and unorganized sectors, over ten million inverters are sold across India.

An emerging aspect of the growth in this back-up economy is the rising interest shown by global companies to participate in the demand story – in greenfield projects as well as acquisitions. Luminous, for instance, was taken over by Schneider. Greaves Cotton, Schneider and other private equity firms are said to be keen to bid for Su-Kam, which is facing bankruptcy proceedings. FDI into the power sector has been to the tune of \$14.59 billion between April 2000 and September 2019. [53](#) And it is not just the companies of the West but also those of the East, such as China, that are engaging with the Indian market. The Guangzhou Sanjing Electric Company has been advertising hybrid solar inverters and inviting orders for container loads from Indian distributors.

Such has been the need and usage of back-up systems that in 2011, the sixty-eighth NSS report created room for a new entry in its survey on household consumption of goods and services.

The new entry: ‘Inverter’.

* * *

There are those who can afford it and then there are those who cannot afford it but pay and bear the cost grimly. Then there are those Indians who simply cannot afford to pay and plug. Public policy and its implementation has bypassed the public by a large measure.

In 1952, the First Five-Year Plan had said, ‘Out of approximately 5,60,000 villages in the country, only about 3,000 or one in about 200 is served with electricity.’ In 1969, the government set up the Rural Electrification Corporation ‘to articulate a response to the pressing exigencies of the nation’. The Electricity Act of 2003

promised a national policy on standalone systems in its Section 4, another on local distribution in Section 5, embedded joint responsibility of state and central governments in Section 6 and a licence-free regime for generation and distribution of electricity in rural areas. ⁵⁴ Did it all add up?

On 30 July 2012, at ten minutes past midnight, a 220kV line tripped. Twenty minutes later, another line tripped, and an hour later, like the proverbial cycle stand which tips over, the synchronously connected arrangement of northern, western, eastern and north-eastern grids, supplying 90,000 mW to all of north India, was down. Over 300 million in eight states were left in darkness. The faults were identified and the system was up first to essential services by 10 a.m. and all the states by 4.52 p.m. ⁵⁵

Then, on 31 July, shortly after noon, the cycle stand collapsed once again. In Delhi, doors of coaches of Delhi Metro trains had to be pried open for passengers to be rescued. Across cities, traffic signals went dead, causing pile-ups. Homes, hospitals, airports and railways were left without essential electricity. Coal miners in Bihar and West Bengal, 265 of them, were trapped for hours without power.

The 31 July blackout is ranked as the largest and the worst outage in history since the installation of electricity grids across the world. Twenty-one states and over 600 million people – meaning every tenth person at that point in the world – were left without power for nine hours. The *Economist*, borrowing from writer V.S. Naipaul, titled its coverage ‘An Area of Darkness’. ⁵⁶

At the heart of darkness, too, was the fact that over 400 million people across India were living without any power after sunset every year. Of the total 247 million households in India, eighty-two million urban and rural households spent the time after sunset in complete darkness as they did not have access to electricity. ⁵⁷ At the standard estimate of five persons per household, eighty-two million homes would translate to over 400 million people. Drill down and the picture worsens. Of the 168 million rural households, seventy-five million households have lived in the dark. In March

2012, out of India's 6.40 lakh villages, 84,297 villages were yet to be connected to electricity. [58](#)

Promises from politicians have piled up. For instance, in April 2005, the Manmohan Singh-led UPA government launched the Rajiv Gandhi Grameen Vidyutikaran Yojana. At the launch, the prime minister said his 'government is committed to providing access to electricity to every village in the country by 2009'. [59](#) It brought electricity to 1.08 lakh un-electrified villages and also connected 21.3 million BPL households. [60](#) After all that was said and done, much was left to be done. Over forty million households continued to be in darkness and 18,000 villages were still un-electrified.

Across political parties, there is this gap between political promise and systemic performance – that Indian distance between declaration and delivery. The right-wing BJP, which came into power in May 2014, was seen as a pro-business regime. It had, by 2015, internalized what Lenin had opined about the correlation between political power and electricity. On 15 August 2015, Prime Minister Narendra Modi said in his Independence Day speech: '[. . .] after so many years of Independence there are 18,500 villages in our country where electric wires and poles are yet to reach.' [61](#)

Modi promised that the 'target of providing electric poles, electric wires and electricity to these 18,500 villages would be achieved within the next 1,000 days'. Piyush Goyal, then minister of power, was assigned this task. He threw open to the public a daily chart on the dashboard of a smartly designed platform called garv.gov.in. The target was declared to have been achieved two days ahead of the deadline, on 28 April 2018.

This claim of 100 per cent electrification of India's villages was met with the expected applause and scepticism. Social media was abuzz with cynical curiosity and queries ranging from 'Have the poles been connected to wires?' to 'Is the wire connected to the house?' to 'Have the wires been connected to electricity?' Couched in the layers of dark humour was experience, of hope heightened by hype and executed by execution.

On 19 July 2018, Suman Balka of the Telangana Rashtra Samiti, representing Peddapalli in Telangana in the Lok Sabha, asked the power ministry for ‘the percentage of rural households with electricity’. R.K. Singh, who had taken charge of the ministry, said that as on 28 April 2018, all inhabited villages had been electrified. He added that as of 11 July 2018, there were 177.3 million rural households, of which ‘152.2 million [85.84 per cent] households are electrified’.

This meant that 25.1 million households in rural India (roughly one in seven households) did not have access to electricity. At five members per household, over 125 million persons – five times the population of Australia – were living without any electricity. As of 15 September 2018, only 1,425 villages across the country could boast of 100 per cent electrified households. Only six states and one union territory – Gujarat, Andhra Pradesh, Tamil Nadu, Kerala, Punjab, Goa and Puducherry – could claim 100 per cent household electrification.

The real question is this: Is 100 per cent village electrification the same as 100 per cent household electrification in these villages?

What constitutes as electrification of a village, for different political parties, has been opaque. Before the claim of 100 per cent village electrification, the Parliamentary Standing Committee on Energy had sought to pin down the definition of electrification by pointing to the contrast between the official claim of 99.4 per cent villages as electrified and the reality of forty million households living without electricity. The committee observed that ‘it is apparent that by present measures, electrification is nothing but sheer formality to declare as many villages as possible electrified’. The committee recommended that the ‘definition of village electrification should be changed such that a village should be declared electrified only when all the households of the village are electrified’. It spelt out that ‘a village shall not get the tag of being electrified in any case when the household coverage is less than 80 per cent.’ [62](#)

After this committee submitted its report to Parliament, a month later, on 25 September 2017, Prime Minister Narendra Modi announced the Pradhan Mantri Sahaj Bijli Har Ghar Yojana,

‘Saubhagya’, to enable electricity connections to all households. He said, ‘The dreams of the poor are the dreams of my government and the mitigation of everyday problems of the poor is the biggest responsibility of my government’. ⁶³ He stated that an allocation of Rs 16,320 crore has been made and that the scheme would be implemented by December 2018. ⁶⁴

The scale of the ambition reflects the magnitude of the challenge. As on 11 October 2017, the target was to connect 2,63,03,084 households. The 31 December 2018 deadline gave the government 446 days to achieve the target. This translated to a strike rate of 58,975 households per day. As of 26 November 2018, data on the dashboard of the power ministry’s dedicated site claimed that over 20.6 million households had been electrified. The government ramped up speed and extended the deadline by three months. On 31 March 2019, it claimed 2,62,84,350 households had been electrified – the number of un-electrified households was 18,734. Connecting 26.30 million households in 536 days translates into a strike rate of 49,072 households per day, a stupendous achievement given the Indian systemic landscape. ⁶⁵

Electrification doesn’t necessarily translate into getting electricity. The challenge doesn’t quite end with poles in villages and electric lines in houses. In September 2018, journalist Nidhi Sharma checked out Saubhagya in villages in the Vidhisha district of poll-bound Madhya Pradesh. What she found is illustrative of the in-built indolence of governments. ⁶⁶ The households were given meters but electricity was yet to light up the homes, even after three months. In Rajoda village, Rekha was given a meter but was told that installation and electricity required her husband to pay a bribe. Another resident, Pratap Singh Jatav, got the wire to his house and a meter on his wall, only to be informed that getting electricity would cost Rs 800 to be paid to the local linesman.

Rattan Lal of Tarawli Kalan village succeeded in getting a meter installed but was yet to see a bulb light up. Manoj Silawat in Basoda block had been following up with the linesman and was told that there are only two linesmen for sixteen villages. And the homes which had the saubhagya (good luck or prosperity) to be connected

found their bulbs fusing within weeks, thanks to the uneven quality of supply, transmission and distribution.

It's not that the saga of unconnected connectivity, or un-electrified but connected households, is limited to rural areas. India's electrification map flickers in many manners at different times. There are those with connections, then there are those connections which get electricity, then there are those connections which get electricity for barely a few hours per day and night. Ergo, the inverter and the DG set are now part of marriage discussions, wedding conversations and even government deliberations since they are listed in government surveys on ownership of durables.

Frequently, the definition of viability in government depends not on input cost and output price but on political input and electoral output. Successive governments have pushed for ramping up generation capacity without finding the need to arrange the cost-price matrix. For reasons of electoral expediency, governments have declined, dodged and dilly-dallied to address the issue of viability. India's politicians, it would appear, believe there can be a market for sellers without buyers paying.

And so, SEBs cannot collect the true price of producing and distributing electricity. Every decade, the condition of SEBs has worsened and every decade SEBs have got bailed out with taxpayer money. In June 2001, a report by the Planning Commission on the working of SEBs boldly stated that the policy of state governments resulted in 'increasing the gap between average tariff and cost of supply' and that rising commercial losses 'cannot be sustained further'. ⁶⁷ A decade later, a World Bank study found finances of power utilities had deteriorated sharply between 2003 and 2011: 'Power sector after-tax losses, excluding state government support (subsidies) to the sector, were Rs 618 billion (\$14 billion) in 2011, equivalent to nearly 17 percent of India's gross fiscal deficit and around 0.7 percent of GDP,' and the total debt of SEBs was over Rs 3.5 lakh crore. ⁶⁸

In the next three years (2012 to 2015), SEBs incurred losses of Rs 1.97 lakh crore – that's roughly Rs 180 crore a day. ⁶⁹ A Power Finance Corporation report on the performance of SEBs revealed that total outstanding loans for all utilities increased from Rs 5.88

lakh crore in March 2014 to Rs 6.70 lakh crore in March 2015 and Rs 7.26 lakh crore in March 2016. In November 2015, the NDA government under Modi set in process a mechanism for resolution and unveiled a new acronym, UDAY – Ujwal Discom Assurance Yojana. Under the new scheme, Piyush Goyal, then power minister, proposed that the burden of SEB losses be transferred to the books of the state governments.

States were cajoled and coerced (it helped that over fifteen of them were ruled by the BJP) to take over 75 per cent of the SEB debt (in phases: as on 30 September 2015, 50 per cent in FY 2015-16 and 25 per cent in FY 2016-17). This was to be operationalized by issue of bonds by states to take over debt and transfer of proceeds to SEBs. The SEBs would be rendered debt-free and in return were obliged to ensure metering at all levels and bring down the transmission and distribution losses to 15 per cent by the end of the 2019 financial year. ⁷⁰ Only four states had losses of less than 15 per cent and ten of over 30 per cent, with Bihar at 42 per cent and Jammu and Kashmir topping the list at 50 per cent.

On 8 January 2019, Power Minister R.K. Singh informed Parliament that SEBs were unable to recover costs on one-fifth of the power supplied. SEBs could not collect any money on 21.42 per cent of the power generated (2,49,197.48 million units) due to transmission and distribution (T&D) loss. ⁷¹ In ten years, between 2007 and 2017, SEBs lost 21.29 lakh gWh – that is nearly twice the 11.68 lakh gWh generated in 2016-17 – to theft and leakage. Imagine if this was available to deliver 30 units per month to the poorest-of-the-poor households to get an idea of how many homes could have been lit. ⁷²

Globally, T&D losses average between 2 per cent and 8 per cent. How does India compare with its BRICS peer group? T&D losses are 5.5 per cent in China, 8.4 per cent in South Africa, 10 per cent in Russia and 15 per cent in Brazil. At 21.42 per cent, India does worse than Pakistan, Sri Lanka and Bangladesh and is placed between Myanmar and Moldova, in the company of the Democratic Republic of Congo. ⁷³

What does this T&D loss cost the nation and its taxpayers? By the government's calculation, each per cent of loss is worth Rs 4,146.60 crore. This means that the 21.42 per cent T&D loss adds up to Rs 88,820 crore or Rs 243.34 crore per day. ⁷⁴

The mounting losses have led to a perverse practice of keeping the dues of the private power producers pending and losses off SEBs' books. At 1,68,857 mW, private power producers account for nearly half of India's 3,64,169 mW generating capacity. As of October 2018, SEBs owed private producers of power over Rs 39,000 crore in dues. A year later, as of November 2019, SEBs owed Rs 82,548 crore to power producers. Unpaid dues are the reason power projects worth trillions of rupees are on the stressed-loans lists of banks.

Surreally, India also has a paradox of scarcity amidst surplus. The surplus is in generating capacity and is reflected in the per capita consumption of power. The world's third largest electricity producer with over 3.64 lakh mW generating capacity and a population of 1.3 billion has a per capita consumption of 1,181 kWh, ranking it between Syria and Gabon. ⁷⁵ Bihar, with a fifth of the national per capita consumption at 272 kWh, is worse than Ivory Coast. Uttar Pradesh, at 585 kWh, lists below the Democratic Republic of Korea. In not a single state, not even the most prosperous ones, is consumption close to the world average per capita of 3,127 kWh.

Normatively, consumption depends on the level of industrialization, weather and on supply. Even after adjusting for weather, India underperforms its peers on the metric of size of economy and population. Clearly, the contours of consumption are constrained by access, availability and affordability.

The back-up economy, as per the claims of Amit Sinha, partner at global consulting outfit Bain and Company, supplies around 80,000 mW of power – that is roughly a fourth of the installed capacity of India – every year into homes and commercial establishments.

Those who can pay are plugging into private solutions rather than waiting for public policies to be realigned to reflect their ongoing realities. Those who can't are still waiting for governments to deliver on their lofty promises.

Here's what American composer and author Oscar Levant said about politicians and their promises: 'He'll double-cross the bridge when he comes to it' ... and several times over, every five years.

5

SECURITY

Law & Disorder

The Preamble to the Constitution of India states:

‘WE, THE PEOPLE OF INDIA,
having solemnly resolved to constitute India into a
SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC
and to secure to all its citizens:
JUSTICE, social, economic and political;
LIBERTY of thought, expression, belief, faith and worship;
EQUALITY of status and of opportunity; and to promote among them all
FRATERNITY assuring the dignity of the individual and the unity and integrity
of the Nation.’

Article 38 (1), Part IV, Directive Principles of State Policy, Constitution of India, says: ‘The State shall strive to promote the welfare of the people by securing and protecting as effectively as it may a social order in which justice, social, economic and political, shall inform all the institutions of the national life.’

* * *

Delhi. It is the national capital. It has over 75,200 policepersons, the highest for any Indian metropolitan city. That’s one uniformed person for every 260 people and one for 0.02 km of geographical area.

So, how safe is Delhi?

In early 2019, Delhi Police released some statistics – every day, five women are raped and eight are molested in Delhi. ¹ In late 2019, Delhi Police provided ten-year data for crimes on women –

mind you, these are the registered cases; several incidents are either not reported or registered. The number of incidents of rapes went up from 507 in 2010 to 1,947 in the eleven months of 2019. ² Between 2015 and 2019, registered rapes were 10,582 and there were 18,884 cases of molestation. That's seven rapes every day and 125 molestations per day, or five every hour. Also registered by Delhi Police on an average were 7,250 heinous crimes – that's twenty a day, in the same period. ³

The data above is that of 'normal' citizens, living and working in 'normal' areas. Those who consider themselves to be above the normal are the lawmakers whose collective self-interest is the cornerstone of their awareness, perhaps even their enlightenment. They have ensured that those parts of Delhi they inhabit are designated as VIP areas. This group includes the prime minister, cabinet ministers, members of Parliament, judges of the Supreme Court, key bureaucrats, the Delhi chief minister, his ministers and so on and so forth.

In March 2017, A. Sampath, Lok Sabha MP, asked for details about thefts at the residences of MPs and MLAs in the VIP areas. The answer: the police had registered seventy-five cases of theft in the homes of MPs and MLAs and twenty-six persons had been arrested. ⁴ A year later, Kapil Moreshwar Patil, MP, asked for the details again. The police had registered 188 cases in the Lodhi Road area and 49,450 cases in NCR. ⁵

Every year, in the days preceding Republic Day, the national capital is enveloped in a high security blanket. Pawan Gupta, a resident of Mandawali in East Delhi, got up on Republic Day morning in 2018 and found his SUV stolen despite heightened security arrangements. A year later, he found that someone had stolen his second SUV from exactly the same spot. The first SUV was yet to be found. ⁶

If this is the state of law and order in the VIP city, how are the other cities faring?

On 16 January 2019, four armed intruders entered a bungalow in Pune's posh Apte Road area at around 9.30 a.m. When told that there was no cash in the house, one of the intruders left with the

owner's car and driver for his Mumbai office to collect Rs 1 crore. Meanwhile, one of the women bolted the room from inside and raised an alarm. The robbers collected cash and valuables worth Rs 5.7 lakh and fled with the booty. [7](#)

Hostage-taking, kidnapping and extortion continue to be a part of reel and real life. Data by the National Crime Records Bureau (NCRB) reveals a rising trend in thefts involving criminal trespassing and burglary. In 2000, cases of theft, dacoity and burglary recorded were 82,280. In 2016, the figure had shot up to 4.94 lakh cases, of which 1.11 lakh involved trespassing. The maximum cases were from Delhi, followed by Maharashtra and Uttar Pradesh. Between 2008 and 2017, property worth Rs 85,951 crore was stolen, of which barely 16 per cent, or property worth Rs 13,450 crore, was recovered. [8](#)

On 30 July 2018, at the busy time of 3.30 p.m., a bike-riding criminal killed a gun-toting guard and injured another. He then robbed a bag with Rs 6.4 lakh from the van of a bank. All this took place in the VVIP zone next to the Raj Bhavan, the Governor's residence, in Lucknow, the capital of Uttar Pradesh. [9](#)

Bank heists may be fading out of movie scripts but not out of everyday India. A factoid: on average, around ninety banks are looted every month across the country. On 3 August 2018, Parliament was informed that between April 2014 and June 2018, there were 4,452 cases of bank robbery, dacoity and theft. [10](#)

On 18 March 2019, robbers in Delhi's Dwarka area, near a busy metro station, covered the CCTV cameras with grease and walked away with an entire ATM machine, leaving a dent of Rs 30 lakh in the books of the Corporation Bank. [11](#) Turns out that in 2018-19, there have been 515 ATM thefts, up from 303 the previous year. [12](#)

Shockingly, rape of foreign women is high enough to be a data classification category for the NCRB. States where the economy is dependent on tourism record rising cases of rape and brutalization of women – there were thirty-two cases of rapes of foreigners and thirty-one cases of assault of women who were tourists or of foreign origin. [13](#)

Goa, otherwise calm and cosmopolitan, is frequently in the news for attacks on foreign women. A forty-eight-year-old British tourist going to her guest house from Canacona railway station in Goa was allegedly beaten brutally, raped and robbed of her bags and Rs 20,000 cash in December 2018. ¹⁴ Earlier, a twenty-eight-year-old Irish tourist had allegedly been beaten up brutally, raped and her mutilated body was left in the nearby Canacona fields.

The unfolding horror of rape assaults is reflected in the stacking-up of statistics. NCRB records show that on average, nearly 100 women are raped every day, with four rapes every hour. Since 2000, reported rapes have increased from 16,496 to 22,172 in 2010 to 38,497 in 2016 and 32,559 in 2017. Madhya Pradesh registers the highest – 5,562 rapes – followed by Uttar Pradesh with 4,246 and Rajasthan with 3,305. ¹⁵

* * *

‘The police force is far from efficient; it is defective in training and organization; it is inadequately supervised; it is generally regarded as corrupt and oppressive; and it has utterly failed to secure the confidence and cordial cooperation of the people.’ These observations by A.H.L. Fraser were made over a century earlier in the 30 May 1903 Report of the Indian Police Commission. They ring true for the state of the police across India even today. ¹⁶

Establishment and maintenance of the rule of law, a basic obligation of the state, demands an ecosystem that deters crime. This ranges from equity in the social order to capacity to maintain order to quality of laws to the presence of a fair and efficient criminal justice system.

All of these represent the quality or lack of governance, locally and nationally. The presence of a uniform can be both deterrence to criminals and an assurance to law-abiding citizens that the rule of law guaranteed by the Constitution will prevail. Sadly, this constitutional promise is stalled by the incapacity of governance and is stranded in politics.

What is the appropriate number of policepersons per lakh population? A UN study suggests that the ‘the median is 303.3

police officers per 100,000 population, the mean is 341.8 and the standard deviation is 241.5'. ¹⁷ For sure, crime prevention is not solely about boots on the ground; it depends on demography, geography, history, the politics of the landscape and economic attainment. Equally, there is no disputing the need for minimum number of feet on the beat. ¹⁸ The assumption that less can do more is just as debatable as more is better.

India has a sanctioned strength of 24.84 lakh policepersons but only 19.41 lakh are in place. Of these, 56,543 – that's more than the total police strength for all of Assam – are deployed for VVIP security. Of the sanctioned strength of 24.84 lakh posts, more than 5.43 lakh, or one of five posts, are vacant. On paper, the national average of police per lakh population is 193. In reality, it is barely 151 per lakh population. Juxtaposed with a population of 1.33 billion, India needs nearly a million more policepersons.

It gets worse as the average is parsed. Fourteen of the most populous states are below the UN-stipulated ratio. One of five police posts lie vacant across the states. Bihar, one of the most backward, poorly governed and crime-prone states, has seventy-four – repeat, seventy-four – police personnel per lakh population. Uttar Pradesh, with a population of over 230 million, has ninety policepersons per lakh people. West Bengal, which is the hotbed of political violence, has 102 policepersons per lakh population.

A deeper drill reveals more. There are roughly 949 women for every 1,000 men in India. Women constitute over 48.5 per cent or nearly half of India's population. It scarcely needs to be emphasized that availability of adequate women in police is essential. Given the rate of crime against women, the presence of women in the police force is a sine qua non. This, though, is not the case.

The total number of women in India's police force, as per the data available in December 2019, is an abysmal 1,69,550. The maximum number of 27,167 is in Maharashtra. Bihar with a female population of nearly fifty-two million or 5.2 crore has just 7,397 women police, translating into a ratio of one policewoman for 6,918 women. Of a total 16,349 police stations, only 613 are women police stations in the country, with one-third of them in Tamil Nadu. Ten states have

no separate women police stations. The ratio of policewomen to civilian women is 1:3,647.

How well are the 16,349 police stations equipped? Of these, 2,193 operate from hired premises. ¹⁹ Communication is essential for police personnel to ensure order and secure peace. Believe it or not, 999 police stations operate without phones and 278 police stations do not have the facility to communicate over very high frequency (VHF) radio sets. ²⁰

How mobile are the police forces for a quick response to real-time law and order situations – critical to preserving lives, property and peace? At the national level, 2,01,127 vehicles are available for police mobility – the national average being eight vehicles per 100 policepersons, including 12,273 heavy and 17,277 medium-duty vehicles. In an age that calls for agility, 19.41 lakh policepersons make do with 81,657 light vehicles and 85,038 two- and three-wheelers. Canine units are critical for surveillance and detection. Across India, the police have just 727 tracker dogs and 1,361 sniffer dogs.

It may seem incredible but there are 362 police stations in India that have no vehicles or transport facility. It is therefore not unknown for victim-citizens to use their own vehicles or hire cars, taxis or auto-rickshaws so as to take policepersons to the scene of the crime – be it a distraught Mumbai woman taking the police back to her residence so that they begin investigations on how all her jewellery was stolen or a grieving father in Meerut taking them to the field to show them the body of his raped and murdered minor daughter.

* * *

Before latter-day politics and politicians came on the scene, India had a system of law and order.

Greek traveller Megasthenes, in the fourth century BC, said this in the travelogue about his visit to India: ‘Below the viceroy, there was another important official known as the samahartri, who was the highest dignitary in charge of revenue collection.’ As the head of the police department, he also ‘attended to the important affairs of

the kingdom'. He had under him 'four sthanikas, each of which attended to the accounts of one quarter of the kingdom.' ²¹

In his *Arthashastra*, Kautilya refers to the construct of dharma, translated as duty in personal and social conduct. He stipulates it as the king's dharma 'to maintain law and order in society and to ensure protection of life, liberty and property'. Kautilya's code encompassed punishment and penalties for both, criminal and civil law violations. ²²

In the chapter titled 'Protection of Parties for or against One's Own Cause in One's Own State', Kautilya spells out the structure: 'So that the large fish does not swallow the small one, people pay one-sixth of the grains as sovereign dues as tax payable to him who protects. It is the king in whom the duties of both Indra [rewarder] and Yama [the punisher] are blended, and he is a visible dispenser of punishments and rewards'. ²³

Percival Griffiths, in *To Guard My People: The History of the Indian Police*, observes that in pre-British India, there were four elements in the organization of society against crime in maintaining order – the community, which was obliged with responsibilities; at the village level, the watchmen; the spies' network; and codes and laws listing severe penalties. This arrangement rested on a simple design. Individuals living in any community are constantly under the gaze of their neighbours and others. The identity of individuals is known and their activities are being observed and, therefore, local crime is scarcely left unsolved. The village watchman system persisted right through the decades – in varying forms and depended again on the heft/clout of the social order. The network of spies, from granular to global, was to suss out Trojans and ensure rebellion was not being fomented. And the code and laws were supportive of the objectives.

The Vijayanagar empire had a multi-tiered policing structure. The kingdom was divided into provinces and each province was under a captain who was responsible for law and order and accountable to the emperor. In *The Vijayanagar Empire: Chronicles of Paes and Nuniz*, the authors reveal a distinct grievance redressal system: 'When anyone suffers wrong and wishes to represent his case to the King he shows how great his suffering is by lying flat on his face on

the ground till they ask him what it is he wants.’ ²⁴ If the petitioner complained about a crime, the Emperor ordered that the property of the captain of the province would be seized if the thief was not caught.

In the pre-Mughal period of the Delhi Sultanate, the responsibility of maintaining order fell on the muhtasib, who oversaw the overall picture and operated through the kotwal, who kept a record of people, their fights and affairs. During the Mughal period, law and order was under the fouzdar, which is the reason behind the continued use of the terms ‘kotwal’ and ‘fouzdar’ in the north of India and, of course, in Hindi films. The fouzdar was obliged to keep an eye on rebels and criminals. The rulers ensured the officials (kotwal and fouzdar) maintained a regular register of residents and non-residents and could prohibit people from leaving or entering the town/city. The tracking system, network of the informers (khufia-navis), the systemic persuasion of community to cooperate (or inform) and severity of punishment enabled safety and order. ²⁵

The policing and criminal justice system started weakening soon after the departure of Akbar and Jahangir. Peter Mundy, a British traveller, found Patna and ‘all the rest of India swarms with rebels and thieves’. Multitudes of chor-minars or masonry pillars studded with the heads of alleged criminals were found ‘commonly near to [sic] great cities’. Mundy found 200 such pillars in ‘Cawnpore’ district. When he returned after a few months, sixty more had been added. ²⁶

By the early days of Shah Jahan, the system was falling apart. Francois Bernier, a French physician, in *Travels in the Mogul Empire*, painted a rather dismal picture of the state and its affairs in the 1660s. He wrote, ‘There is no one before whom the injured peasant, artisan or tradesman can pour out his complaints.’ Bernier describes ‘the tyranny of the Timariots, Governors and Revenue Contractors – a tyranny which even the monarch, if so disposed, has no means of controlling in provinces not contiguous to his capital, a tyranny often so excessive as to deprive the peasant and artisan of the necessities of life, and leave them to die of misery and exhaustion’.

Bernier quotes the Persian proverb, *Na-hac Kouta Beter-Bas hac Deraz* (short injustice is better than long justice) and goes on to characterize the criminal justice system of the day: 'If justice be ever administered, it is among the lower classes, among persons who, being equally poor, have no means of corrupting the judges and of buying false witnesses.' [27](#)

The collapse of the system of policing and criminal justice overlapped with the ascendancy of the East India Company. Griffiths writes, 'The British thus inherited a system which, even at its best, would have been unsatisfactory and which largely broke down in the declining days of the Mogul Empire when every powerful man became a law unto himself.' For nearly a hundred years after Shah Jahan, the idea of order and justice yo-yoed between theory and practice.

As the East India Company expanded its footprint, it established the structure of diarchy, which required the company servants to follow a policy of non-intervention in civil administration – the naib dewans were tasked with collecting revenue and the zamindars were required to maintain thanedars for the preservation of law and order. Often in practice, thanedars were missing. Worse, zamindars were found to be in cahoots with burglars and dacoits. Disorder was the order of the times. In 1772, Warren Hastings ended the system of diarchy and took direct control of the affairs of administration.

Viceroy Hastings set about recasting the structure and had the laws codified to serve the purposes of ensuring order, which the British wanted, and justice that the people sorely yearned for. The district was made the base of the structure for civil and criminal processes. Every district got a civil court under a European judge. Existing practices and laws were modified and European judges went as circuit judges. The power to control the police was given to the district judge. The daroga system, with Indian officers manning around 20 square miles, came into place. The daroga got a salary of Rs 25 and Rs 10 for every dacoit/brigand captured, as also commission on the recovery of stolen property.

In the Bengal region, such efforts were only partly successful. Lord Cornwallis, on taking charge, found the system in disarray. He dismantled the zamindar-controlled thanedar-system and put

policing directly under the officers of the government – full-time police officials were appointed for the first time through Regulation XXII of 1793. A series of changes followed thereafter, first under Lord Minto, who introduced superintendents of police and a reporting system, and then by Lord Charles Napier, who created the captain-commissioner hierarchy. Over the decades – especially after the Vellore mutiny of 1806, the 1809 Police Commission and the 1860 Police Commission – existing systems received corrective action in Bengal, Bombay and Madras, as well as Sind.

The changes were not without confusion. Consider this. In 1856, F.J. Halliday took over as governor of Bengal. Before taking over, he was a proponent of the separation of judicial and executive powers vested with the collectors. He later revised his view. He said ‘a European may comprehend the need for separate functionaries for justice’, but it leaves the locals ‘confused and aggrieved’ with them failing to understand ‘why there should be more than one “Hakim” and why the “Hakim” to whom he goes, according to his own expression as to a father for justice, should be incapable of rendering him justice, whatever be the nature of his grievance, or whatever be the position of his adversary.’ [28](#)

A relatively modern style of policing, with a more effective administrative and legal approach, arrived with Charles John Canning. Viscount Canning, governor general of India between 1856 and 1862, faced the rebellion of 1857. It was Canning who pushed through the passage of the Government of India Act of 1858, the setting up of high courts and Supreme Court, the formation of the imperial civil services, the Indian Penal Code and the Code of Criminal Procedure.

On 17 August 1860, the Government of India appointed a police commission. The focus was on assessing the kind of, and count of, police through the British territories on the payroll of the government and to suggest ways to ‘economize expenditure’ and improve efficiency. It proposed consolidation of all bodies – regular police, watch and ward staff, cantonment police, the Thagi and Dakaiti Department and detectives on the force – into one police entity. It also stipulated that the police will have no military duties and the military will have nothing to do with policing.

The Police Act of 1861 is the template on which independent India's police administration was built. It continues to govern Indian police well into the twenty-first century. The act created a new Indian police service and the hierarchy with the inspector general at the top was followed by layers of officers right down to the district level. Interestingly, till 1921, no Indian found admission into this elite service. [29](#)

The period between 1858 and 1868 saw the enactment of a series of codes – the Indian Penal Code, which classified offences in sections in 1860; the Criminal Procedure Code, which empowered the police with processes and the people with safeguards in 1861; and the Indian Evidence Act, which established the route to establishment of offence or innocence in 1861. These three were retained by the government of independent India and continue to form the bedrock of policing and the criminal justice system even today.

By the end of the century, many of the policy choices made in implementing the reforms that led to the 1861 act were unravelling. Choice of loyalty over merit for promotions, lack of leadership and poor pay from inadequate allocations resulted in poor performance. All these and other factors resulted in pathetic policing. On 27 March 1901, Lord Curzon said, 'Another matter that is one of anxious preoccupation to us is the reform of the police. Grave abuses have crept into this branch of service, and are responsible for administrative and judicial shortcomings that are generally deplored, besides producing a wide-spread and legitimate discontent.' [30](#) A year later, on 16 March 1902, Curzon outlined the approach to the issue – there was a proposal to constitute a police commission which would present a blueprint for reforms.

Chiding those who questioned the delay, Curzon said, 'A reform in India is a change applied not to a town, or a district, or a province, or a country, but to a continent. Conceive anyone proposing a new plan or a new policy for the whole of Europe – if such a thing were practicable, and doing it without the fullest inquiry in advance – inquiry both to ascertain the dimensions and necessities of the case and to let the various experts and authorities have their say.'

A few days before the commission's report was presented, Curzon pointed out, 'Reform we must and reform we shall,' but 'the main improvement that is required, which is a moral improvement, cannot come all in a gallop'. Men are, he said, on the whole, what their surroundings make them, and men do what their opportunities permit. The implementation of the commission's recommendations, he added, will deliver 'a better and purer police as a consequence of the changes that we shall introduce, but we shall not have straightaway found a New Jerusalem until we have educated the people who are to build and to inhabit it'.

The report of the Indian Police Commission was presented in May 1903. Its 317 pages make for an interesting read, elaborating on the history of police organization, popular opinion about police and their work, the geographical detailing from village police to cities to states, the structure from hierarchy to pay to training and need for special police, issues of prevention of crime, engagement with magistrates, process and protocols of reporting, investigation and prosecution and, of course, the funding of the department.

The commission opines, 'These reforms can in any case be only gradually introduced and years must pass before their full effects are realized,' and 'if accepted and persistently enforced, will result in inestimable advantage'. It adds that the commission members 'realize that this involves large expenditure; but they feel that the police department; which so nearly concerns the life of the people, has hitherto been starved; that the reforms they propose are absolutely essential; and it is well worth while to pay for them the price required'.

In the next four decades, however, the face of the police was that of an imperialist force putting down the upsurge of the freedom movement. There were excesses, abuse of power and hostility. There was little to no concern for the rise in crime in British India, given that the police were preoccupied with quelling the nationalist movement. Adding sharp teeth to their imperialist muscle in 1913, the British added sections 120A and 120B to the Indian Penal Code, making the police a 'strike force' – it was enabled to use mere suspicion and charge individual groups with criminal conspiracy.

After Independence, the Government of India retained the structure as designed by the Police Commission of 1903, notwithstanding pleas to recast its colonial configuration. Representative democracy did not result in the elimination of the ills that afflicted the law. The *lal pugree* (red headgear) was abolished but little else changed, be it the code or the character of the police. As in the colonial times, law and order was designated as a subject of the state governments.

Expectations of reforms and change were derailed by events in the run-up to the Partition and thereafter, and detained by the absence of an alternative view of state order. There was also a reluctance to disturb what the Congress had grown used to, post the passage of the Government of India Act of 1935. On the eve of the formation of the republic, Sardar Vallabhbhai Patel said, ‘No democracy can be run with the policeman’s baton. It has become a habit with us to blame the police. We have to change this attitude. It was another police whom we criticized night and day.’ He then asked, ‘Today you see no English face among our policemen. What else is revolution if not this?’ [31](#)

For decades thereafter, the quality, quantity, character or capacity of the police organization didn’t quite figure on the national radar. The Planning Commission, set up in 1950, underlined the Directive Principles of State Policy as its guiding light to secure social, economic and political justice. However, the instrument of securing justice and order continued to be cloaked in colonial clothes – indeed, the First Five-Year Plan has no specific programme or mention about police organization or capacity-building in the twenty-four chapters or the appendix segmented into fifteen sections.

Notwithstanding the rise in population and the subsequent rise in crime and challenges to internal security, policing was essentially a matter for the state governments to deal with. The picture of police organization thus depended on the observer, the geography of the observer, the historical perspective and political affiliation. The contradictions between what was and what ought to be was most visible at the lower levels and around events; the picture was that of

a reactive, generally inefficient rather than a proactively efficient organization.

Certainly, there were attempts to repair matters. There were state police commissions: the Kerala Police Reorganization Committee in 1959, the Bengal Police Commission of 1960-61, the Punjab Police Commission of 1961-62, the Tamil Nadu Police Commission of 1971 and others. Prakash Singh, former director general of Uttar Pradesh police, says, 'The common observation of the commissions was that the prevalence and perpetuation of partisan political interference led to a decline in efficiency and trust, rise in corruption and a widening gulf between the public and the police.' [32](#)

The first national effort to rethink the organization of the police came seven decades (seventy-four years to be precise) after the submission of the report of the Indian Police Commission in 1903. It was not driven by the state of law and order or the grievances of the public but as a reaction to the excesses committed upon the political class and some citizens during the 635-day-long Emergency imposed by the Indira Gandhi government. There were arrests and torture of politicians and some citizens between June 1975 and March 1977. This catalysed the political class to set up the National Police Commission (NPC) on 15 November 1977.

It submitted eight reports between February 1979 and May 1981. The first recommended changes in inquiries of police and police atrocities. The second mooted the formation of the Criminal Justice Commission to monitor police agencies; measures to curb political interference and arbitrary transfers. The third suggested the creation of a special cell for probing complaints of the weaker sections of society. The fourth was on the process of FIR registration, witness statements and restoration of stolen property. The fifth dealt with recruitment and training and induction of more women in the police force. The sixth addressed legislation of the Criminal Injuries Compensation Act, examinations for promotions and rejection of reservation. The seventh looked at creation of capacity, from the need for research institutes to the appropriate size of force and norms for police stations. The eighth recommended norms for accountability, tenures of top cops, separation of investigation, establishment of a Police Complaints Authority, a National Security

Commission and, most importantly, a new law to replace the archaic Indian Police Act of 1861.

The tragic irony is that the political consensus which led to the setting up of the NPC in 1977 had crumbled. Indira Gandhi was back in power by 1980 and, unsurprisingly, there was not much enthusiasm for the recommendations of the NPC and their implementation.

As Mrs Gandhi's friend and American president Ronald Reagan once said, 'Status quo, you know, is Latin for "the mess we're in".' Status quo in the Indian context simply means business as usual – a convenient perch for successive governments, even after Indira and the Congress.

* * *

Six out of ten Indians are born after 1990. They would not know of an India where the uniformed private security guard was not a ubiquitous sight inside and outside commercial buildings, shopping complexes, malls, restaurants, theatres and housing colonies. These private security guards are contemporary India's human safety barriers. Private security regulates entry and exit, they guard privacy and possessions, they play watch-n-ward roles, frequently they maintain law and order, and their very presence prevents some amount of crime. Ergo, they provide that much-needed safety space.

In the sixties and seventies, the concept of private security was that one word – watchman! He was either from Nepal or a Pathan who tapped his stick on the ground during the night and did odd jobs during the day. Or there was the 'darwan-chowkidar' outside office doors and factories.

In 1970, Major R.C. Nanda, on retiring from the armed forces, decided to set up a business where he could deploy his experience and also provide jobs to ex-servicemen. He formalized the watchman-darwan-chowkidar into private security services. The name: Tops Security Services. It began as a kind of boutique operation offering man and muscle to the rich and famous and for high-profile events along with personal security for those who could afford it.

In the eighties, his son Rahul was still in his teens but looking ahead: 'I was managing my family's other businesses, a biscuit-making facility and a restaurant called Tutkuks in Mumbai's Juhu. The businesses were doing well but biscuits were competing with big brands and the restaurant was capital- and labour-intensive. I knew there was great potential in the private security business.'

Rahul Nanda took over in 1992 and he decided to scale up operations: 'The private security guard is the first face visitors encounter when entering any premises. I realized that private security needed to be more professional than the informal chowkidari set-up. I began recruiting English-speaking people and graduates at higher levels, imparted training and mentored them on the core concepts of security.'

Expanding in scale and reach, Tops Securities added other services. For example, an emergency ambulance service called 1252 – which Nanda claims reaches in nine minutes – that should have been provided by state governments but instead went private. Tops Securities also provides the app-watch – for those going on holiday, there is an app and the safeguarding of the house is with the agency. Tops, says Rahul Nanda, was the 'first company to get into armoured vans for delivery of cash to banks'. In 2019, Tops Securities had over 1,40,000 employees in India, over 250 offices and 9,700 customers.

Another forerunner in the security services business is strikingly similar in both timing and spirit. R.K. Sinha, a writer who contributed to publications such as *Searchlight* and *Dharmyug*, was an ardent follower of Jayaprakash Narayan. As an activist, he had been trying to get jobs for struggling retired personnel from the armed forces since the end of the 1971 war. Some time in the late seventies, he was in Ramgarh (in then undivided Bihar). He met his friend Hari Budhia, who, while running an industrial unit, had labour trouble and asked for advice. Sinha promptly suggested that he recruit a few ex-servicemen from the Bihar Regiment for security. Budhia pointed out that the moment they came on the rolls, they became part of the union and therefore part of the problem. Budhia then told Sinha, 'Why don't you start an enterprise, recruit ex-servicemen and position them at industrial units and businesses?'

The idea struck a chord with Sinha, who saw it more as a philanthropic not-for-profit organization than a business. Sinha set up his enterprise, Security and Intelligence Services (SIS), and Budhia was his first customer. The desire to offer employment to more ex-servicemen and generate demand for services resulted in the expansion of the enterprise. Within a few years, Sinha realized there was a huge potential but not enough trained and disciplined people to recruit. He sought out people with the National Cadet Corps (NCC) and realized soon enough that he would have to recruit and train able-bodied civilians.

‘In 1982,’ says Sinha, ‘we set up the first residential training academy in Patna for security personnel.’ He studied the training programmes at steel mills and public sector enterprises for their officials. He then designed his template, keeping in mind the need for it to be scalable. He made the training format and the syllabus portable so it could be taken to different centres. He also recognized that the security business was more than just manning posts and that personnel needed to be trained across different safety aspects, including fire safety and disaster management. This led to Sinha setting up the Indian Institute of Security and Safety Management.

In the new millennium, Sinha’s son Rituraj, an alumnus of Leeds University Business School, joined SIS and took charge of the operations. Rituraj says, ‘There was a need to professionalize by inducting technology and expanding the scope of SIS from merely providing security personnel to a host of activities – security services, electronic security solutions, cash logistics and facility management.’ He went global in 2008, acquiring one of Australia’s largest security firms, Chubb Security. Expansion required resources. ‘In 2017, we took the company public, listing it on the National Stock Exchange and Bombay Stock Exchange.’

When Rituraj took charge of operations, the north India-based SIS had just over 5,000 employees and a turnover of under Rs 25 crore. He says, ‘In 2019, it employs over 2 lakh employees at 14,000 sites for 6,000 customers and has over 284 branches, with over Rs 5,800 crore in revenue. SIS trains over 20,000 specialists every year at its own academies, is growing between 18 and 20 per

cent and is the second largest service taxpayer to the national exchequer.’

The west India-based Tops Securities also expanded rapidly, offering a range of services – manned guarding, facility management, event security, investigations, electronic security, emergency response, skill development, last-mile delivery, warehousing, labour supply and payroll management. Rahul Nanda, who believes that ‘if you are not living on the edge, you are taking up too much space’, now heads a multi-billion-dollar enterprise. Along the way, he has acquired a master’s in business administration, become a certified international investigator, is on the board of several security associations, has a doctorate in martial arts and is now known as Dr Diwan Rahul Nanda.

Necessity is also the mother of entrepreneurship. The population in cities and towns has shot up from less than 100 million in the late eighties to over 400 million by 2012. The need to feel safe, for security, has grown exponentially in both business and residential areas, and has drawn more and more people like Rahul and Rituraj to set up enterprises offering security services.

The burgeoning of population in urban areas has driven the demand for sustainable infrastructure and mechanisms for delivery of services in private and public goods. This rapid, albeit haphazard, urbanization has also demanded an expansion of primary and ancillary services, all of which, as this book proves, are being met privately. The very public need for a visible, reliable policing service is being addressed by the private sector, which is setting up agencies across the country.

The inadequacy of the state to provide security – police, law and order, safe and shared public spaces from offices to parks – has driven subscription to private security services and created demarcated segments: B2B, where agencies provide services to private businesses, B2C, where agencies provide safety to homes and townships, and B2G, where agencies provide services to the government. In 2010, there were over ten national security companies, over a hundred regional operators and an estimated 15,000 local agencies offering security services. By 2015, the need

for security services had grown to a market of nearly Rs 40,000 crore.

In 2020, private security agencies provide coverage to schools, colleges, financial institutions, hotels, hospitals, corporate offices, industrial units, mining and drilling platforms, retail and commercial real estate, as also services such as transit, transport, logistics, beat patrol with central monitoring, emergency response, investigations, fire and safety, people access and screening, facility management and more.

It could be argued that not all of these places can or should be secured by men in khaki. The counter question is why the institutions feel the need for private security. Can any establishment risk awaiting the police to show up if there is an incident? Very simply, the lack of order on the streets leads to posting of private security at the door. And this is because there simply aren't enough boots policing the street beat. It comes full circle, back to the problematic – and as yet unaddressed by successive governments – ratio of police to population.

Sardar Patel had said, 'Today you see no English face among our policemen'. In 2020, it is hard to spot the symbol of the state in khaki in the sea of blue and grey. As the state fails to deliver on its primary obligation, security is provided at a price by private security agencies.

* * *

In India, legislation and regulation tend to follow in the wake of private sectoral expansion, and a prime example would be the spread of cable television. The private security business, operating in the critical areas of individual and institutional security, did not have the guard rails of statutory structure. There was no central law or regulations for over two decades. The landscape was littered with disputes, rackets of agencies, extracting commissions, not paying on time, extortion, etc.

One of the first agitations witnessed in the private security business was in Mumbai. Personnel employed by security agencies came together and went on strike seeking political intervention

against exploitation. The government, in the process of resolution, recognized there was no law covering either the provision of the services or the protection of the rights of the employees enrolled in such companies. It dawned on the powers that be that disputes and litigation against the provider of security or subscriber were stranded in a legal void. This, and the spectre of violence by security men, forced the Maharashtra government to push through an ordinance to bring into force the Maharashtra Private Security Guards (Regulation of Employment and Welfare) Act, 1981.

The state government defined it as ‘an Act for regulating the employment of private security guards employed in factories and establishments in the state of Maharashtra and for making better provisions for their terms and conditions of employment and welfare, through the establishment of a Board therefore, and for matters connected with’. The law put all security under the umbrella of factories and establishments; those who provided security services were required to be registered with the security guards board. Many of the private security agencies that didn’t fall under the category of either factory or establishment found themselves banned. The council of the Security Association of India (an industry association) fought the issue all the way to the Supreme Court.

There were also instances of private agencies taking up assignments not covered by the law. Or those who used grey areas to whittle down costs and not pay personnel as per norms. More and more instances of nefarious and usurious employment practices by those running security agencies came to light after the 1981 law. These led to cases in different courts and much confusion about definitions and obligations.

Some of the confusion could be illustrated by this case. A financial institution appoints a private security agency for its staff in Mumbai’s Andheri and Worli but doesn’t follow the process of registering with the board, as required by the 1981 law. A complaint is filed by the inspector of the Security Guards Board and the financial institution goes to court. It argues that the private security has been hired for the residential quarters of its staff. These being non-commercial establishments, the terms and conditions specified

under law for wages and payments do not apply. The high court shot down the contention by stating that it's not the place of posting that matters but who pays for the service. ³³

It was clear that the basic law had been badly crafted and it led to exclusion rather than inclusion of categories of services. The law should have stipulated that anyone anywhere securing the services of a private security agency would need to follow the wages/payment norms laid down by the act. Critically, the Maharashtra law was so bogged down by conditions and contracts that it did not even attempt to pave the road ahead for the growth of this sector. It was as if the system had simply not foreseen the obvious expansion that would take place.

Across the country, particularly in urban and industrial centres, other players alive to the potential entered the sector, even as others struggled with provisions or lack of them. Issues of commissions, unpaid dues, violation of contracts and, of course, crooked practices cropped up and multiplied.

In the meantime, the private security agencies were expanding not just geographically but horizontally. The expansion into new segments was again with inadequate or no legal provisions. A critical logistical challenge in Indian banking is the disbursal of cash from the nineteen regional offices of the RBI to over 4,000 currency chests across the country to banks, and from banks to over 1.3 lakh branches and over a lakh ATMs. ³⁴ This is normally done by armoured cash vans. And this was taken up by private security agencies even though the law did not allow them to carry weapons. The underlying logic was to prevent the creation of private militia. As individuals, Indians are allowed to apply for and acquire weapons for personal protection, not commercial use. The private security agencies quickly found a way out. The jugaad solution was to find those persons with gun licences specifically issued for crop protection and employ them as guards for the vans.

In March 1993, after he was appointed at the Centre as the minister in charge of internal security, Rajesh Pilot was briefed by his department on brewing issues, with one of them being the lawless existence of private security agencies across the country and their potential for conflicts. As an ex-serviceman who had first

come to North Block in the seventies to get his documents attested by a bada saab (big man), Pilot was well aware of the pitfalls and perils that ex-servicemen encountered while looking for jobs. ³⁵ In his mind, there was no doubt that ex-servicemen were being exploited by the agencies and that the sector existed in an inexplicable legal vacuum.

Pilot organized several meetings and appointed a committee under the chairmanship of Vijay Karan, former director of the Central Bureau of Investigation. The committee included members such as Commander Om Prakash, then president of the Security Association of India, retired officers of the Indian Police Service, security executives of corporate bodies who were clients, and experts from the UK, the US, Malaysia, Singapore, Thailand and Canada. The committee was tasked with assessing the issues and presenting a draft for a law to govern the sector.

On 14 December 1994, the government introduced the Private Security Guards and Agencies (Regulation) Bill in the Rajya Sabha. The bill was, thereafter, referred to the Standing Committee on Home Affairs. The Standing Committee presented its report to Parliament on 26 February 1996, a full two years after the introduction of the bill. There was the political reason and then there was systemic stasis. The P.V. Narasimha Rao government was on its last legs by the end of 1994, with the Congress having lost crucial elections in the states and facing an internal rebellion of unprecedented proportions.

The ministry mandarins were in no hurry either. The bill was sent back to another committee following the fall of the Rao regime and the ushering in of the United Front government led by H.D. Deve Gowda. For the next four years, the bill was left comatose in Parliament as governments changed. Rituraj Sinha recalls that time: ‘Leaders of our industry, who wanted this corral of laws to keep delinquents out and regulate the sector, campaigned long and hard. My father and others repeatedly pleaded with the government for a legal structure.’

The home ministry being the nodal point, private security agency owners made presentations to six home ministers: S.B. Chavan, who was briefed by Pilot, Murli Manohar Joshi during the thirteen-day

Vajpayee regime, Indrajit Gupta, L.K. Advani and Shivraj Patil. A succession of governments – remember, between 1994 and 2000, there were three elections, four regimes and four prime ministers – passed this burning buck on to the next government. The private security agencies continued operating in legal limbo all the way into the new millennium.

Given the large number of people employed by these agencies, their issues attracted political concern and attention. In November 2001, Sheesh Ram Singh Ravi, Lok Sabha MP, asked for details on the growth of the private security agencies and if any measures were being taken to curb the menace. The home ministry revealed that there were 107 private security agencies in Delhi and admitted that there was no regulation governing the sector.

By way of an explanation, it added, ‘In order to provide for the regulation of private security guards and agencies, the Private Security Guards and Agencies (Regulations) Bill, 1994, was introduced in the Rajya Sabha on the 14th December, 1994, and thereafter debated on a number of occasions – the last consideration being on 2nd of August, 2000.’ [36](#)

Six months later, Rama Prasad Goenka, industrialist and Rajya Sabha MP, asked the home ministry ‘whether a comprehensive plan has been drawn up to regulate the activities of mushrooming private security agencies functioning in the capital and other parts of the country, in view of the reported involvement of some personnel of these agencies in crimes’. The government’s answer illustrated the level of apathy: ‘In order to provide for the regulation of private security guards and agencies, the Private Security Guards and Agencies (Regulation) Bill, 1994, was introduced in the Rajya Sabha on 14th December, 1994. The Bill is pending consideration in the Rajya Sabha.’ [37](#) There was no reference to a timeline nor was there any explanation for six years of pendency.

A year later, Suresh Ramrao Jadhav, Lok Sabha MP, specifically asked whether there was any system or requirement for private security agencies to register with an authority. The home ministry simply said that station house officers (SHO) and police officials interacted with agency representatives and that ‘there is no

requirement under law at present for such private security agencies to register themselves with the government'. ³⁸

It didn't seem to matter that the business model and alleged activities of the security agencies had repeatedly triggered questions by MPs in Parliament. Besides complaints of personnel being denied wages and involvement in racketeering, there were incidences of agencies participating in subversive and anti-national activities.

In November 2001, N. Janardhana Reddy and Shyama Singh, Lok Sabha MPs, asked, 'Whether it has come to the notice of the government that private security agencies in the country are having links with the ISI [Inter-Services Intelligence of Pakistan] and other militant organizations in the neighbouring countries?' ³⁹ The home ministry admitted, 'There have been instances where some persons involved with private security agencies were found to be conducting espionage for Pakistan-based agencies. Because of the alertness of our counter-intelligence agencies, the espionage rings were busted and the persons involved arrested.'

The answers symbolized the spectacle of systemic dysfunction. Parliament is told that there is no law requiring private security agencies to register with any authority. Parliament is also told that there have been serious incidents of unlawful activities. There are also proven instances of private security personnel being involved with militant groups and the Pakistani spy agency. Yet, the spectre of subversion doesn't move the system – not the government, not any political party sitting in Parliament, not any senior leaders as office-bearers in Parliament itself – from stasis to action.

In December 2004, Sitaram Singh, Lok Sabha MP, asked the home ministry 'whether the private security agencies of the country are having a nexus with ISI and other terrorist organizations of the neighbouring countries?' and about the 'steps taken by the government to check the activities of the private security agencies'. ⁴⁰ The home ministry makes another shocking admission: 'There have been instances where some persons working with private security agencies were found to be conducting espionage for Pakistan-based agencies. Appropriate action has been taken against them. Our security agencies maintain due vigil against such anti-

national elements.’ The ministry then added, ‘In order to provide for the regulation of private security guards and private security agencies, a law regulating their activities is under consideration of the government.’

A quarter of a century after the first law in Maharashtra and eleven years after the introduction of the bill in Rajya Sabha, the Parliament of India finally brought in a law for the regulation and development of private security agencies. The Private Security Agencies (Regulation) Act was passed on 23 June 2005 ‘to provide for the regulation of private security agencies and for matters connected therewith or incidental thereto’.

* * *

Even as private security agencies were expanding, allocations, funding and recruitment of police personnel were declining. This was registering on the political Richter scale in the states, particularly as an employment issue. It provided a handle to parties, particularly chieftains of regional parties, to demand funds. Speaking at the forty-ninth National Development Council meeting of chief ministers and the prime minister on 1 September 2001, Haryana Chief Minister Om Prakash Chautala said, ‘While Delhi has one policeman for 250 (persons), Haryana has one policeman for 700 persons. The state requires huge funds for strengthening and modernizing its police force.’ Asking the Centre for special assistance, he added that this would help contain crime in neighbouring Delhi as well.

Unfortunately, though, the angst did not proceed further to resolution. Police organization, expansion and modernization are issues that are scarcely spoken about and are rarely on the agenda of parties in power. For sure, they may find mention in an election manifesto but they are scarcely followed up. Regimes loathe yielding ground on the levers of power, the guiding principle being that what is presented as a conviction during a campaign is subject to political convenience. Also, thanks to the caste hierarchy of administration, the destiny of the uniformed is informed and influenced by the turf war between the Indian administrative and

police services over the who, what, when and why of policy. This is best illustrated by nearly two decades of non-action on NPC 1977.

Anguished by the inordinate delay and apathy, in 1996, the former DGP of Uttar Pradesh, Prakash Singh, approached the Supreme Court of India seeking intervention and directions for the implementation of the National Police Commission Report of 1977. On directions from the court, the government appointed a committee under super cop Julio F. Ribeiro in May 1998. The committee submitted its report by 1999 and it was sent to the states for appropriate action. The needle didn't quite move.

Two years later, in January 2000, the government appointed a committee under former home secretary K. Padmanabhaiah to suggest structural changes to meet the challenges in the new millennium. These recommendations, like the earlier ones, were sent to state governments. Parallel to this, the government set up the Malimath Committee on Reforms in the Criminal Justice System. Its 158 recommendations – separation of investigation and law and order wings in police stations, boosting the capacity of police organizations and the establishment of state security commissions – were sent to state governments.

The recommendations of the committees remained on paper. Finally, on 22 September 2005, the Supreme Court of India stepped in and delivered a historic judgment, instructing central and state governments to comply with seven directives – constitute state security mechanism, minimum tenure for state police chief, minimum tenure of officers of inspector general rank and above, separation of investigation and law and order, creation of a police establishment board, a Police Complaint Authority and the National Security Commission.

However, a decade after the court's 2005 intervention, crucial recommendations from NPC 1977 were still pending, such as the constitution of state security commissions, selection of the DGP from a panel of officers, appointment of the Anti-Corruption Bureau chief from a panel, insulation of investigations and the replacement of the Police Act of 1861. The level of frustration with the system was expressed by Chief Justice of India J.S. Khehar on 1 March

2017: ‘Police reforms are going on and on. Nobody listens to our orders.’ [41](#)

Pendency is a permanent resident in India’s political economy. The level of apathy, political and administrative, is best illustrated by the state of a critical data point – the police to per lakh population ratio. In 2006, the ratio was 142. [42](#) In 2008, it fell to 129. [43](#) Remember, this was the period when large parts of India were wracked by left-wing extremism, terror attacks and rising crime in urban and peri-urban areas, particularly against women.

In 2011, the approach paper to the twelfth plan took note of the issue and urged ‘effective police reforms are an important step in strengthening confidence in the rule of law’. It also observed that the police personnel to population in India was ‘one of the lowest in the world and the police are also inadequately equipped and organized’. [44](#)

The words did not translate into special allocations or policy initiative. The alibi used by the central government has always been that law and order is a state subject. For the record, the Centre can specify allocations and can urge the Finance Commission to earmark funding for police capacity.

On 1 January 2008, the sanctioned strength for police across states was 17,46,215, whereas the actual strength was 14,78,888 – that’s 2,67,327 vacancies waiting to be filled, jobs that can be given to suitable candidates. That’s two and a half lakh more policepersons available to protect citizens. In 2012, the sanctioned strength of police across states was raised to 21,24,596, but the actual strength was 15,85,117 – nearly one of four posts were vacant with total vacancies at 5,39,479. [45](#)

Such has been the intransigence of state governments that the issue of vacancies also landed in the court. On 13 March 2013, Manish Kumar, an advocate, filed a PIL in the Supreme Court, asking the apex court to intervene and direct the Union of India and the states to constitute a police commission and fill the vacancies in the police posts. On 17 April 2017, a Supreme Court bench of Chief Justice J.S. Khehar and justices D.Y. Chandrachud and Sanjay K. Kaul ordered either the home secretary or a representative joint

secretary of Uttar Pradesh, West Bengal, Bihar, Jharkhand, Karnataka and Tamil Nadu, states with the highest vacancies in police departments, to remain present in court. ⁴⁶ The vacancies among the states were as follows: UP had 1.51 lakh posts or half its sanctioned strength vacant, West Bengal had 37,325 posts, Bihar had 34,251, Jharkhand had 26,303, Karnataka had 24,399 and Tamil Nadu had 19,803. On average, 20 per cent of the posts were vacant.

The counsel for states argued that the ‘process is on to fill the vacancies’. The court was unimpressed and the bench observed that the petition had been pending in the Supreme Court for four years and governments were yet to fill the posts: ‘We tried our best to persuade you to fill the posts. But you have not.’ ⁴⁷ The level of sloth in the system is best illustrated by the response of the state governments in the apex court. The Bihar government sought two years from the Supreme Court to fill up 174 posts of stenographers. The very approach earned the ire of the court. ‘This proposal is completely unacceptable. You want time till 2019 to fill up the posts of 174 stenographers. This is not done. You are making fun of this court,’ said the bench headed by Chief Justice Khehar. ⁴⁸

The proceedings of the case validate the rot in the system. It was as if the Supreme Court virtually took charge of the human resources function of the police departments of the states, listing vacancies by rank and geographies and asking for timelines and deadlines. With so many states and so many vacancies, orders were issued on 24 April and 1 May 2017 for different states. The apex court thereafter directed the home departments of the states to ‘nominate an officer not below the rank of joint secretary to prepare a road map’.

Unsurprisingly, the issue of vacant posts and implications on law and order came up in the Rajya Sabha in Parliament post the Supreme Court order on 25 July 2018. Members of Parliament Sukhram Singh Yadav, Vishambhar Prasad Nishad and Chhaya Verma asked the government ‘whether it was a fact that a large number of posts of police personnel are lying vacant in the country, and if so whether it is affecting the safety of citizens and various other works?’ Minister of State for Home Hansraj G. Ahir affirmed

that there 'are a large number of vacant posts in the police forces in all the states and union territories'. [49](#)

Then, typically, and as has been the tradition with successive governments, the home ministry, in what can be characterized as provision of alibi, added, 'Public order and police fall in list-ii (state list) of the Seventh Schedule of the Constitution of India. It is the responsibility of the state governments to fill up the vacancies to curb the increasing cases of crimes as well as providing more safety to people. However, the Centre advises the states from time to time for taking requisite action in this regard.' The vast gulf between stated policy and actual practice was revealed in the sentence that followed. Ahir pointed out, 'The Ministry of Home Affairs has issued advisories dated 9 August 2014 and 19 April 2018 to all the state governments for filling up the existing vacancies in the police force.' In April 2018, there were 5,38,237 posts of police personnel vacant across the states.

One of the lame arguments offered by political parties and state governments was that there was a shortage of persons applying for police jobs. In February 2018, 992 PhD holders, 23,000 MPhil holders, 2.5 lakh postgraduates and eight lakh graduates were among 20 lakh applicants for 9,500 posts of typists, village administrators and stenographers. The required qualification was passing Class X and the number of graduates applying outnumbered those with Class X qualification. [50](#) In September 2018, over 93,000 people applied for the posts of peons in the police department and around 50,000 graduates, 28,000 postgraduates and 3,700 PhD holders applied for sixty-two vacant posts in the telecom department of UP Police. [51](#) The minimum eligibility qualification for the post was passing Class V and the salary was Rs 20,000.

On 13 March 2019, the PIL filed by Manish Kumar seeking directions and the creation of a police commission came up for a hearing in the Supreme Court yet again. It was in the court of Chief Justice Ranjan Gogoi, the seventh CJI since the filing of the petition in 2013. The bench directed the 'states and union territories to fill up the vacant posts'. It also directed that since the vacancies concerned many states, the matter be sent 'to high courts for effective monitoring' and that 'issues and problems', which are

state-specific be ‘appropriately dealt with by the respective high courts’. [52](#)

Frequently, states have cited lack of resources to push measures. While states could do with more, lack of funding is at best a lame argument. It isn’t that states do not have their own funds or are prevented from spending. Between 2009-10 and 2018-19, the total revenue of states went up from Rs 3.6 lakh crore to Rs 12.2 lakh crore and expenditure of states more than trebled from Rs 10.15 lakh crore to Rs 35.59 lakh crore.

Thanks to the morphing of politics into poll-optics, state governments tend to use revenue more for electoral efficiency than for governance gains.

* * *

As politicians use alibis and governments institutionalize denial, the people of India suffer from lack of police protection.

Their state is so perilous that it can also be gauged from the number of private security companies who have crafted a business model and are making an entrepreneurial success leveraging policy denial. Google ‘private security agency India’ and it throws up over 150 million entries. There are rankings by aggregators and top 100 security agencies. There are national and international companies offering security in India that ‘secure and ensure the safety of everything that matters’ and there are those which ‘integrate technology, people and knowledge to offer protective services to customers’.

Services offered include to hi-tech surveillance to personal bodyguards. Personal protection can be by ex-army or paramilitary personnel, former SPG/NSG (Special Protection Group / National Security Guard) persons. There are also ‘bouncers’ for events and security cover for high-profile foreigners in India for business or pleasure.

An emerging segment in security is specialized protection for women. There are the regular agencies that offer trained personnel and then there are services offered by women trained by women at outfits set up by women. Deepa Parab, an actor-turned-activist-

turned-entrepreneur originally wanted to be in the police force. While working on film sets, she became interested in the business and first joined a female bouncer squad and then set up Ranragini Academy in 2016. ⁵⁴ Parab offers free training and ensures that she also deploys underprivileged women – her last count was 540 of them.

There is also Swamini Lady Bouncers (SLB), which was started by ex-beautician Amita Kadam. She now has a team of fifty that works at events, pubs, restaurants and for celebrities. ⁵⁵ The SLB women are housewives, bus attendants, college students and people who do odd jobs. They are trained through the gamut of protection protocol, from frisking to shielding to throwing out the unwanted.

The agencies too have acquired their own security with affiliations, and are less of an unorganized sector under two umbrella associations – Security Association of India (SAI) and the Central Association of Private Security Industry (CAPSI). SAI seeks to ‘encourage high standards of service and equipment required by the security industry’ and CAPSI claims to have a governing board of ‘former army generals, veteran police and paramilitary officers, high-ranking intelligence professionals from the Central Bureau of Investigation and premier governmental intelligence agencies’.

Significantly and ironically, the largest emerging clientele for private security agencies are public institutions. In August 2018, K. Margatham, Lok Sabha MP, asked the home ministry ‘whether the Union government has directed the state governments to outsource non-core duties of police’. The government replied, ‘No, Madam. Further, police being a state subject falling in list-ii (state list) of the Seventh Schedule of the Constitution of India, it is primarily the responsibility of the state governments/union territories to outsource non-core duties of police.’ ⁵⁶

The fact is, every day government departments issue tenders asking private security agencies to submit proposals for providing security to offices, buildings and installations of the government. Among the departments issuing tender notices for private security in June 2019 were South Central Railway, Ordnance Factory, Ministry of Environment and Climate Change, Public Health Department,

Chennai, Department of Agriculture, Bharat Sanchar Nigam Limited, Central Public Works Department and West Bengal State Warehousing Corporation.

Tenders are also regularly issued for the installation of closed circuit television (CCTV). In India, it is estimated that over a million CCTV and surveillance systems are sold every month. State governments are also now leveraging private security presence and private tech capacity. At a conference called Drishticon, the Bureau of Police Research and Development (BRPD) and technology companies discussed the integration of private technology systems with state police systems. Telangana government's Nenu Saitham ('me too' in Telugu) is an example. ⁵⁷ The programme promoted by the Hyderabad Police aims at integrating private CCTV feeds into a central system to enable the police to monitor the feed. To ensure compatibility and quality, security agencies have been directed to choose from a list of products and select vendors. PwC, in a recent report, contended that 'capturing and collating data in real time is the lifeline of a safe city project, especially if the data pertains to an incident leading to a security threat. The idea is to collect data from a wide range of different sources in digital formats so that it can be efficiently processed and used in real time.' ⁵⁸

Given the inadequacies of what used to be a comforting factor earlier, the police's beat constabulary, commercial and residential complexes in several Indian cities have taken to CCTV monitoring with app-based systems, which allow owners to ensure a remote check on their homes, malls, shops and businesses via their phones or laptops. MyGate, one of the companies, 'offers numerous innovative features to simplify daily chores and improve security standards around your gated community' through its security and community management modules.

The rise of risks to personal safety has further enhanced the induction of technology-based solutions for private security. The rise in kidnapping of children or family members for ransom and concern about behaviour of domestics has spawned a number of private security segments. Bollywood superstar Shah Rukh Khan is persuading people in advertisements to use a car security device that uses dual cameras to record everything happening inside and outside

the car. The system offers live streaming, video recordings, global positioning system (GPS) tracking, in-car alarms and mobile alerts for those who value the safety of their loved ones and, of course, can pay for it.

The use of unmanned aerial vehicles, or drones as they are known popularly, is the next frontier. Private security agencies are looking at customizing offerings for private homes and public gatherings to private businesses and public institutions. These range from monitoring pipelines, manufacturing and power plants and plantations for private enterprises to surveillance of critical assets such as highways, railways, waterways and dams for the government. Private security agencies are offering governments drone monitoring for encroachment of forests and illegal mining. The reach of the internet affords the use of drones to detect and direct interventions at agricultural farms, road accidents and during natural disasters. Globally, revenue from drone deployment – for agriculture, mining, power, utilities, railways and waterways – is expected to touch \$100 billion by 2020 and the private security agencies are zooming in on the opportunity in India. [59](#)

At the most conservative estimate, over 500 million Indians – more if contesting estimates are to be factored – are expected to be living in towns and cities by 2025. As such, a large part of the GDP is generated in such areas. A Barclays report suggests that ‘Urban India could house 35 per cent of India’s population and contribute 70 to 75 per cent of its GDP by 2020.’ [60](#) This translates into further need and opportunity.

A PwC study, done for the Federation of Indian Chambers of Commerce and Industry (FICCI), compares the growth of private security business across the globe and in India. It says, ‘While the global private security services industry is expected to grow at a compound annual growth rate (CAGR) of 7 per cent, the Indian private security services industry is expected to grow much faster at 20 per cent.’ It is estimated that private security business in India could touch almost a trillion rupees, or, to be more specific, Rs 99,000 crore by 2020 and Rs 1.5 trillion by 2022. [61](#)

In terms of sheer workforce size, the private security industry is estimated to be as large as the combined number of army, navy, air

force and police put together. In terms of employment, it is the second largest employer after the agriculture sector. The sector is expected to add three million jobs in three years to the existing 8.9 million personnel. This makes it more than four times the 1.8 million police personnel currently stationed across the country.

The ratio of private security personnel to police personnel in the US is 58:42. The German ratio is half and half. In Britain, which designed India's police organization, the ratio is 61:39.

In India, the ratio of paid-for security and uniformed police stands at 83:17 – stark evidence of public policy failure.

EPILOGUE

The Exodus

The word exodus owes its etymology to the Greek word ‘exodos’. It is used to describe the final scene of a play, particularly a tragedy; a blend of the prefix ‘ex’ and ‘hodos’ can also mean ‘road’ or ‘way’. In modern English usage, exodus characterizes mass departure.

The pictorially eloquent noun illustrates the context of *The Gated Republic*, the phenomenon of mass exit, of millions of Indians disinvesting from faith in government delivery of services.

Exodus is that mass exit towards and into gated solutions, each a republic of its own. Millions of Indians are disinvesting from hope in the government’s promises and adopting alternatives in the wake of such glaring public policy failures. And as this happens, the gap between governance and its people is visibly widening pan-India and deepening in scale, across income segments and sectors.

It is not that politicians and successive governments are not aware of this exodus.

On 22 July 2019, Rajiv Pratap Rudy, BJP MP, asked the HRD ministry if it was aware of the fall in enrolment of students in government schools. The reply was shocking. In just four years, between 2014 and 2018, the number of students enrolled in government schools fell by 12.4 million, ¹ from 144.9 million to 131.7 million – that is more than the entire school student population of the UK. ²

And how did private schools fare? Umesh G. Jadhav, BJP MP from Karnataka, asked the government about the enrolment of

students in private schools. In just five years, enrolment in private schools shot up from 69.31 million to 83.30 million in 2018. ³

In his seminal thesis *Exit, Voice, and Loyalty*, political economist Albert Hirschman proposes that dissatisfied citizens can stay loyal despite the dysfunctionalities and voice their protest or exit from the system. Exits and voices of protest are signals for the state to recognize disillusionment and can be opportunities to take corrective action. In the Indian context, neither facts nor opinion, neither exit nor voice has materially altered the landscape of failure.

The world over, the migration to private paid-for services is driven by rising income levels. In India, the migration of taxpaying citizens entitled to public services is driven by falling levels of service. The dilution and decimation in accountability propels the exit of even those who cannot afford to do so – over six of ten students in the poor and populous state of Uttar Pradesh attend private schools. The poor and the middle class who cannot afford to pay also cannot afford to stay, given the risks it entails.

N.R. Narayana Murthy, founder-chairman of Infosys, recalls, ‘One day around 50 women employees, who maintain the campus, came with a request. They all wanted me to get their children admission in English-medium private schools. And they were willing to spend a significant part of their salaries on the fees. They were sacrificing their present for a better future for their children.’

Over the years, India has been witnessing the clothing of failures in alibis of scale and complexity, the repackaging of old and tired ideas with new targets and incremental tinkering. This is a crisis of governance; it is a crisis of unimaginable proportions as the research for this book – finding and reading voluminous reports, dredging historical and real-time (as real as it can get in the Indian circumstance) data, interviewing experts – reveals. In response, the political class consistently sells allocations as outcomes. Their maxim, ‘money answereth all things’, throws some more taxpayer money at a problem and has also emasculated the public’s interrogation of policy and process.

The factoids that follow symbolize failures – the persistence of pathos which stems from either political apathy or callousness or both.

Lack of teachers – due to chronic absenteeism and vacant posts – has been identified as affecting the education of India’s children. But neither the issue of absenteeism nor vacant posts gets addressed. Notwithstanding the oft-repeated slogan ‘*Beti bachao, beti padhao*’ (protect the girl child’s future by sending her to school), in June 2018, all the twenty-four girl students in a school in Kabrel village near Hisar failed in their matriculation exam. The village school had no teacher of science, mathematics, Hindi or Sanskrit, while the social science teacher of the village had been sent to another school on deputation. ⁴ Over 11.13 lakh teacher posts are vacant in primary, secondary and higher secondary schools as of 2019. ⁵

In July 2019, the girl students of a school in Manesar in Haryana had to file a petition in the Punjab and Haryana High Court for protection to attend school – the lack of security and boundary walls encouraged sexual harassment on the way to school and creepy characters to peep into their classes. ⁶ Of the 10.94 lakh government schools, 4.36 lakh do not have a boundary wall. Notwithstanding the grand-standing about Swachh Bharat (clean India), over 58,800 schools lack toilets for boys and 31,700 schools lack a toilet for girls. ⁷ The definition of total electrification calls for every public institution and facility to be connected and provided with electricity. Yet, of the 10.94 lakh schools, over 4.6 lakh schools do not have electricity. ⁸

The poor state of healthcare is manifest in the tragic death of children in government hospitals – 134 in Rajkot and eighty-five in Ahmedabad in Gujarat and 107 in Kota in Rajasthan. ⁹ India’s six lakh villages must make do with one health sub-centre for three villages and one of five required centres is yet to be set up. ¹⁰ The deficit in public spending results in Indians meeting as much as 64 per cent of healthcare costs out of their own pockets. India not only does worse than its BRICS peers in public healthcare spending but also heavily indebted poor countries as per World Bank data. ¹¹

India has a new ministry for water, Jal Shakti, which literally means water power. Pankaj Choudhary, BJP MP from Uttar Pradesh, asked the minister of Jal Shakti how many rural homes get piped water. Rural India has 178.71 million households. Only 32.76

million households – that is just over 18.33 per cent of homes – get piped water supply. Translated, nearly 730 million people – more than twice the population of the US – are living without access to piped water. [12](#)

India is staring at the spectre of a full-blown water crisis. Chennai and Bengaluru have already made it to international headlines as tech-savvy but waterless cities. Meanwhile, one in five urban local bodies and major metros like Patna, Chandigarh, Delhi, Pune, Indore, Nashik, Jaipur, Jodhpur, Kota, Ludhiana, Agra, Ghaziabad and Hyderabad are facing a water crisis. [13](#) India ranks thirteenth among seventeen ‘extremely high water-risk countries’ – among the five worst placed, with a population larger than all sixteen countries put together. [14](#)

In June 2019, the government declared India would be a \$5 trillion economy by 2024. Economic activity is fuelled by energy. But the SEBs are back in the red because they do not, and cannot, collect the cost of one in five units they distribute. On 27 August 2019, Power Minister R.K. Singh conceded, ‘You cannot be a developed country with a power sector that has load shedding, in which you have got dark areas [. . .] you must have a sustainable and viable power sector where investments are possible and viable.’

The lack of personal safety is visible in headlines and in data on the rise of heinous crimes, especially on women. But the Model Police Act is yet to arrive, a decade after it was promised. There is no Robert Peel on the horizon. [15](#) Boots on the ground are critical for crime prevention. But despite intervention by the Supreme Court and advisories, state governments have left one in five posts vacant – of the 23.79 lakh police personnel needed to ensure order and the safety and security of its citizens, over 5.28 lakh posts are vacant. [16](#)

India’s citizens have no choice but to seek private solutions for abject public failures.

* * *

The persistent state of stasis has propelled omnibus solutions – ones which cover all bases, so to speak, for those who can afford to pay.

Gated communities are mushrooming, with builders offering end users (both residential and business) the choice to buy into projects that provide assured water, reliable power, sewage, transit transport, schools, health clinics and hospitals, malls and office space, all at one place. These enclaves sprawl not only horizontally but also rise vertically.

The installation of private solutions holds lessons for governments on what is and what could be.

Satish Magar was, and continues to be, the quintessential farmer lad of Maharashtra. Some time in 1993, after India dismantled the licence raj and liberalized foreign investment, Magar sensed the opening up of opportunities. He thought about monetizing the principal assets of farmers, including his own land. He and his immediate family owned around 40 per cent of the nearly 430 acres belonging to 120 families in the vicinity and so they took the lead in organizing the community.

Typically, the template of urbanization has a builder beginning to buy land piecemeal from farmers and setting up a project once he has critical square feet. Magar says, 'It was important that farmers pool their land and develop it themselves, so that they could reap the maximum benefit.' ¹⁷ It wasn't easy but Magar convinced them and got the clearances and set up Magarpatta City – a one-stop solution for housing and businesses. The farmers got a down payment, annuity and the value of each share owned by farmers in the venture is now worth nearly Rs 5 crore.

Magarpatta in Pune may be unique in its model of ownership and development, but the idea of gated complexes is now the norm across India. Lodha Group's scion Abhishek is setting up a 'smart city' with 'all the bells and whistles' over an area of 4,500 acres to leverage the potential of industrialization and urbanization segmented as residential, business and city services at Dombivali outside Mumbai. Chintalapati Srinivasa Raju is setting up an 'integrated business city' 55 km north of bustling Chennai, over 7,500 acres. Sizes vary but the formula sustains. Every city in India has developers designing what they call 'gated townships' – essentially, an address where the citizen is protected from public policy failures.

The amoebic nature of urbanization can be and could have been curbed if governments and policy wonks referred to and learnt lessons from history. In 1667, at the end of the Anglo-Dutch war, the British took control of New Amsterdam in exchange for Run (an outpost on Spice Islands in Indonesia) and renamed it New York. Part of the deal was Manhattan, a swampy island. The transformation of Manhattan began with the designing of a future-proof grid in 1811, which outlined space for every activity. ¹⁸ As the city grew, the grid was able to accommodate demand and evolution.

Policy evolution requires legal structure. Interestingly, the Seventh Schedule, which allocates functions between the Centre and states, does not mention urban development. ¹⁹ And both, the Centre and states, have ministries for urban development. The design of cities and urban habitats calls for an approach that is mindful of context. That, though, has not been the Indian experience.

Every decade has seen new governments ushering in new acronyms or slogans – JNNURM (the Jawaharlal Nehru National Urban Renewal Mission), Smart Cities, et al. The Smart Cities programme could have piloted creation of new cities to trigger a demonstration effect but it was rendered into a dumb programme with a ranking contest amidst meltdown of metros across the country. Another opportunity was in the conversion of ‘census towns’. A private attempt to work with government has been successfully initiated by Ahmedabad-based architect Bimal Patel, who drew up a template of a model town. This model was available for replicating. In 2015, the Centre asked the states to convert 3,784 census-identified places into municipalities (by census definition, these are no longer villages but are yet to be towns). The census towns continue to be stranded in no-policy land.

There is no denying that public policy gaps have propelled growth in myriad private segments. These have, in turn, expanded employment and wooed investments, foreign and domestic. The private initiative for solutions to public policy failures has made education, healthcare and security services among the fastest growing segments of the economy.

But this cannot, and does not, mean that when the government doesn’t do its basic job (which includes minding the economy),

these private segments are not affected. Rather amusingly, a minister in 2019 ascribed the tanking economy's slowdown in the auto sector as a linear result of the growth of shared cab services, Uber and Ola. No thanks to the crawl-and-commute conditions in metropolitan cities, ride share revenue has now grown to over \$10 billion.

There was a time when governments set up market squares accessible to local communities. Thanks to the combination of potholes, poor lighting and parking problems, accessing markets has been rendered an urban nightmare in the new millennium. It is easier to order almost everything through e-commerce sites into the gated republics. Unsurprisingly, investors are whetting their appetite on e-business opportunities, which are expected to cross \$84 billion by 2021. [20](#)

* * *

There is much lather in political conversations about the scale of population, the complexities of language, cultures and geographies, the Centre-state structure and the constraint of resources. All of these are frequently used as reasons for inadequacy (none in governance – neither politician nor policy-maker – will admit to failure). The fact is that the challenges of access, availability, affordability and accountability have been addressed in other developing and developed countries.

There is no easy fix or flyover solution for challenges of development. Take, for instance, education. A World Bank team led by Michael Crawford, Amer Hasan and Raja Kattan compiled a report on countries that have enabled success in education by long-term attention focusing on effective spending, grooming teachers, physical development of children and benchmark assessments as per global standards.

South Korea, Japan and Singapore – all agrarian societies in the post-war period – have designed their education policies on a broader framework of human development and economic growth. They have aligned the pieces to recognize that education improves

health outcomes, increases productivity of agriculture, to empower the people to move with new technologies.

Finland had a Soviet-style crumbling education system. The redesign rested on a simple inclusive percept: ‘nobody falls out of the boat’. This ensured students enjoyed school, and fun was a motivator for learning. Teachers, recruited through a competitive exam, focus on critical thinking and are empowered to maximize the potential of the student, not just their scores. Singapore took the help of education psychologists to design curriculum. It adopted the maxim ‘teach less, learn more’ in 2005 and built a programme around nurturing creativity, critical thinking and a passion for lifelong learning. [21](#)

True, resources do matter. Money was made available at a very early stage, even when the countries were not well-off, but they saw it as an investment. Korea ramped up spending on education from 14.3 per cent of its budget to over 20 per cent. Japan ensured no cuts – spending on education at 14.5 per cent of government expenditure stood constant for three decades. Countries aiming to build human capital for economic growth prioritize spending public resources on basic education to deliver good-quality and universally available education. China and Vietnam prioritized investment in primary and secondary education in broadening access to schooling and skills. [22](#)

It is equally true that the quality of education depends more on approach than quantity of monies. Finland, Korea and Singapore recruited the top achievers of universities and wooed those elsewhere to enter teacher training. Only the top scorers across streams were offered jobs, making teaching a destination for the best and the talented. To retain talent and sustain quality, teachers are paid top dollars – teachers in Japan and Korea with fifteen years of experience earn more than private sector peers. In Finland, teaching is among the most desired careers. It’s not just money but the system is designed to enable collaborative networks and support groups.

And the results validate success – the top performers on the PISA ranking are China, Singapore, Estonia, Canada, Finland, Korea, Sweden and Japan. Fifteen-year-old students from municipalities of Beijing, Shanghai, Zhejiang and Jiangsu outperformed fellow

students from seventy-eight other participating education systems across the world in math and in science. ²³ In the ultimate analysis, more than the socio-economic background, which does have a bearing, it is the policies, processes and practices that determine the quality of learning and citizenry that steps out of schools.

Look at healthcare. Over fifty countries in the world have implemented universal healthcare systems – from the National Health Service, owned and operated by the British government, to the Canadian government-paid private-provided system, from the Swedish legacy system to the Singaporean hybrid of self-pay and tax-paid options. Across geographies, the principal concern is about the width of coverage, and the differentiator most discussed is how or who pays for the care.

There is much to learn from Sweden, which in the 1870s was among the poorest in Europe. A small nation with big lessons for large countries, Sweden's prosperity is located in its systematic reforms: land changes, property rights, anti-corruption focus and free trade. In 1910, it introduced social insurance schemes. It paid attention to the principle of equity, to cost effectiveness, ensured public funding and empowered local governments for delivery of services – all of this with accountability. Out-of-pocket expenditure on healthcare is less than 15 per cent of the total health expenditure of individuals. ²⁴ Besides systems and spending, its dynamic health policy includes evangelism in preventive care and the mapping of big tag diseases such as cancer.

Vietnam's healthcare system was afflicted as it migrated from communism to socialism. By the end of the eighties, the average citizen was paying eighty cents of every dollar for healthcare out of pocket. In 1994, Vietnam refurbished its healthcare policy – providing funding, infrastructure, incentives – through Commune Health Clinics (CHCs). ²⁵ CHCs must provide basic services and are responsible for preventive care for maternal and child health, curative care, hygiene and health promotion. Vietnam's Ministry of Health has a system of continuous reviews – it learns from assessments – of quality of equipment, infrastructure and professionals. In 2009, a legal framework specified the quality of professionals by mandating accreditation, health worker licensing

and empowering continuing education. In 2011, it set benchmark standards of readiness by specifying ninety indicators; in 2012, it issued standards for nurses and auxiliary staff; and in 2014, it issued benchmarks for availability of medicines.

Till 2000, the poor in Mexico were like those in India: their options were to live with illness, suffer inadequate public healthcare or spend personal savings and borrow to get decent care. A 2000 WHO report highlighted the level of catastrophic health expenditure on Mexicans as one of the serious issues facing the country. Insurance was available mostly to employees of the government and of corporations. In 2001, Mexico designed Seguro Popular de Salud, a health coverage scheme, as a reform to deliver healthcare as a social right. Antiquated hospitals got new premises, ambulances and healthcare professionals. Capacity creation and care was funded by three sources of contribution: federal government, state government and families. ²⁶ When the scheme had to be expanded in 2009, during the downturn following the global financial crisis, Mexico sought aid from the World Bank to sustain the programme. Seguro Popular covers over fifty-two million people for 250 types of procedures and over 500 medicines.

For decades, China's healthcare system was defined by its barefoot doctors, aka community workers, who propagated hygiene and traditional medicines for limited treatment. Post the eighties, there were rural and urban cooperative systems where in-patient treatment was covered. The big turn was in 2009, when the Chinese government enabled a vertical system of healthcare with a fresh policy focusing on five critical areas: reforms of public hospitals, human and physical infrastructure, improving of primary clinics, the quality of service and access to essential medicines and expansion of insurance coverage. Pilot projects in hundred cities form part of the rolling assessment for scalable approaches to healthcare. ²⁷

In September 2018, India's government launched one of the world's largest health insurance programmes promising coverage to hundred million families. While there is reason to applaud this Ayushman Bharat, there is reason to worry. Insurance coverage without a functional primary healthcare system is inefficient and expensive.

Then there is the lack of capacity at every level, both physical and human. The Centre for Disease Dynamics, Economics and Policy, in its 2019 study, observes, ‘Healthcare providers without formal training provide more than 70 per cent of primary care in India. Only 58 per cent of those referring to themselves as doctors in India’s cities have a medical degree; in rural areas the proportion is just 19 per cent, and a third of “doctors” have only a secondary school education.’ ²⁸ India needs people to care for people – it needs over six lakh doctors and nearly two million nurses. The lack of a decent education system guarantees that far fewer doctors, nurses and para-medics are produced than the nation requires. Unsurprisingly, albeit sadly, India ranks at 145 among 195 countries, behind China ranked at forty-eight, Sri Lanka at seventy-one and even Bangladesh placed at 133, in the Healthcare Access and Quality and Index. ²⁹

Success in public policy is precluded by three distinct fault lines – failure to invest in physical and human infrastructure, divorce of authority and accountability and, most tragically, a systemically inverted approach to problems. That is, the very initiation of policy and design of any programme is focussed overwhelmingly on consequences (mostly political). The causatives, therefore, receive short shrift and are often left untended.

This is starkly visible in the management of the water economy. The temporal and geological factors have been exacerbated by policies, acts of omission and commission. The build and supply approach to water management has left untended conservation, adaptation and distribution economics.

Water management demands sensible policies for access, distribution and pricing. Countries across the world have redesigned policy, funded new distribution systems, priced the commodity and planned for the future. Australia developed a market-based approach, introduced user-pays systems, clarified and redefined property rights to separate water rights from land ownership. Singapore initiated ‘Four National Taps’ to cut down dependence on import from Malaysia and increase procurement from local catchments, desalination and reclamation. Israel used innovation and today claims the highest yield of agriculture per drop of water.

Undoubtedly, India has its task cut out because it stares at a water crisis of monumental proportions. But there are solutions that are doable. Find ways to harness the water flowing into the oceans. Transfer water from surplus to scarce river basins. Conserve water and water tables. Enable harvesting of rainwater and storm water. Deal with greywater, which is estimated at around 60 litres per person per day. Treat wastewater before its release so that it doesn't contaminate new water. Stop misuse of water in agriculture. Create a sustainable system for delivery of potable and safe water to homes.

India tops the chart on agri-produce across segments and its gross output shapes pricing in global marts. Over 80 per cent of the water is used for agriculture and just over 9 per cent for domestic use, with industry and energy using the rest. So, when India exports agri-commodities, it is also exporting water. It has, however, never priced the principal input, which is water. Yes, food security is critical but so is conservation of a scarce resource.

India's agricultural crop map is a live laboratory of how disaster is perpetuated. Salinity of water at one end and the need to mine water at the other have eroded yield and returns on farming. India needs a new crop map – one that aligns availability of water, soil systems and weather conditions. Technology affords satellite imaging of water tables, regional mapping of soil, analysis for suitable crops and time-of-need based irrigation systems to reduce water wastage and enable higher yield per drop. Technology also offers solutions for sustainable manufacturing and energy processes. The advent of the Fourth Industrial Revolution brings along a host of technologies to enhance efficiency. Artificial Intelligence (AI) is already being used in Australia and elsewhere to fill in data gaps to understand water resources within a watershed region. AI can also be deployed for precision irrigation and smart water networks.

The challenge of supplying water to homes demands a structural re-think of how water is to be delivered and how it is to be priced. In ancient times, the empires in Babylon, Egypt, Greece, Rome and China used aqueducts to transport water from source to habitats and was the genesis of the build-and-supply model. ³⁰ However, like all

systems, water management strategies must evolve with the context and align with availability, accessibility and affordability.

Critical for water sustainability is pricing. People feel obliged to pay Rs 20 for a small bottle to sip from in offices and homes. Residential complexes pay thousands of rupees for tankers to supply water. The constant refusal of the political class to address the issue squarely with appropriate pricing mechanisms and subsidies has created perverse incentives and distortions across the water supply chain. Any solution which circumvents the question of pricing will at best be a halfway house and aggravate the water crisis.

The problem of poor electricity supply is more and more about last-mile delivery – the management of supply, distribution and pricing. Baner and Balewadi, the IT and software hub of Pune, are supposed to be part of the Smart City programme. Between April and December 2019, residents of Baner and Balewadi experienced 181 power cuts of over an hour in 231 days. [31](#) It is not just Pune and not just the other smart cities which are afflicted by a dumb distribution design. Outages pockmark access to power across urbania.

Critical issues remain unattended despite economic consequences. Theft and leakage have left power plants on the brink of bankruptcy. On pricing, it's not a shock that the losses piled up on balance sheets, despite three bailouts in two decades, are about cost and pricing. Consider this: the average plant load factor – its use of installed capacity – in India is less than 60 per cent. When a plant is set up, its installed capacity translates into cost. To be sustainable, the plant must utilize, by global standards, at least 75 per cent of its generating capacity. The distribution system must ensure recovery of power supplied. In reality, the plant operates at less than 60 per cent capacity and the mess in distribution robs it of twenty of every hundred units supplied.

It cannot be emphasized enough – the solutions to the issues haunting water and power distribution are located in pricing. The world over, time-of-day (TOD) tariff has enabled levelling of asymmetric consumption, in domestic, industrial and agricultural use. TOD tariff has the potential to run plants more efficiently, bring down operating costs, make supply reliable and curb outages.

There are solutions to address the issue of power for agriculture. Metering of the power supplied to farmers can deliver data on average consumption and this data can be used to convert the free power regime into a pre-paid coupon or direct cash transfer paid for from the state's budget. An incentive scheme that funds capital costs for simple solar-based power can get farming off the addiction of free bijli-pani (power and water). Farmer cooperatives or collectives can also be incentivized to set up solar or wind power systems with first-use rights for reliable power.

The question then is – why is it not happening? The perpetuation of this loss-making model is enabled by the architecture of the operating structure. The first task is to break up the monopoly structure of power utilities and call for bids for the last-mile connections to two or more players through a public auction. The government will still be obliged to deliver the service, but the outsourcing of last-mile delivery will mitigate theft and leakage. With two or three providers per circle, the system will spur competition – the consumer can be offered choice and portability. Better collection of tariff revenue can enable funding of modernization of the systems – digitization, metering, smart services and even conversion from the less efficient alternate current systems to more efficient direct current systems that consume less and can align to off-grid power systems such as rooftop solar.

The maintenance of law and order is trapped amidst antiquated administrative architecture and fossilized functionality perpetuated by perverse politics. The reality of one police person per 600 persons alongside rising incidents of heinous crimes and poor gender representation in the face of rising crime against women bodes badly for the near future. All is unwell and all will get worse unless repaired.

There is an urgent need for funding to bolster institutional capacity and a redesign of the existing systems for efficiency and modernization. Follow the oft-repeated recommendations from that parade of commissions and committees. Recast form and function to also tackle digital challenges such as identity theft, AI snooping, autonomous vehicle attacks and cyber security. And fill those vacant police posts – it is shameful that a citizen must approach the

Supreme Court so that he or she can begin to feel adequately protected. The Government of India and the states – who always find the political will to collaborate on electorally profitable programmes – need to heed what the Constitution of India lays down on citizen protection.

Funding is resolvable. In the short term, the Centre can make available one-time grants and a portion of MPs' and MLAs' constituency funds can be dedicated to bolster infrastructure at police stations. Like any other service, police services can be monetized. In fact, several states, like Maharashtra for instance, have enacted laws such as the Maharashtra State Security Corporation Act, 2010, and set up police units which provide armed protection for a fee.

In the longer run, delinquency of states can be redressed with institutional mechanisms. The Finance Commission is empowered to align allocations with objectives and outcomes. It can assign a ratio of state expenditure, non-lapsable for specified purposes, for maintenance of order. It can seek expert advice to design a matrix to assess deficit in capacity, and dovetail it with crime levels and need for progressive policing. Policing in India needs to be about securing the people.

* * *

Human development depends on policies across sectors.

There is simultaneity, a correlation between provision of education, water, electricity, health and the rule of law. Lack of access to water and its poor quality is a major cause for deaths of children under the age of five. Contaminated water, vector-borne diseases and poor nutrition are the prime causes of stunting and malnutrition. Such deaths tend to be seen in isolation, but they should not be. There is a linear relationship between good education and awareness of hygiene – attendance in schools demands provision of water, electricity and toilets. Being able to reach school safely and come back home safely requires adequate street lighting and police. To not align these is to fail every upcoming generation of India's future citizens.

Literature on development policies has redefined the last mile of delivery as the first mile of governance – whether education, health, water, electricity or provision of law and order for the personal safety of individuals, families and businesses. China hosts a larger population and is three times the size of India. On every parameter of human development, China is ahead of India. That a so-called authoritarian regime is better at human development says something about the systems and processes of the democracy. The key is decentralization. Every country which has delivered on basic public goods and services has done so by empowering local governments.

A quarter of a century ago, the Parliament of India amended the Constitution – the seventy-third and seventy-fourth amendments were meant to enable decentralization, making explicit what was implicit – to empower governance at panchayats and municipal bodies. Has that happened? The promised revolution has been converted into a politically convenient glacial evolution of devolution. States have resisted transfer of funds, functions and functionaries to local governments. Twenty-five years after the amendments, elected folks in panchayats or urban local bodies can be overruled by officials in the state government departments.

There is colonization of local bodies and then there is colonization of states. Outlining the principles, B.R. Ambedkar, one of the founding fathers of the Constitution, said on 26 November 1949, ‘The basic principle of Federalism is that the Legislative and Executive authority is partitioned between the Centre and the states not by any law to be made by the Centre but by the Constitution itself. This is what Constitution does. The states under our Constitution are in no way dependent upon the Centre for their legislative or executive authority. The Centre and the states are co-equal in this matter.’ Logic and legitimacy were thrust aside and, over a period of time, governments centralized form functions and corralled funds. In 2018, among the biggest departments in the central government in Delhi were those that were state subjects. Indeed, the biggest items on the Union Budget are often subjects that pertain to subjects with the states.

The failures littering the political economy – in health, education, provision of electricity and water, assurance of the rule of law – are

the consequences of flyover politics. The dysfunctionality – where objectives and allocations fail to deliver outcomes – is located in the structure. The Centre dominates the design of the policies where states have little or no say. The states tasked with implementation know the Centre can do little about flaws in implementation and quality of outcomes. And so governance is trapped between authority and accountability.

Seventy-two years since Independence, the elected of a free India are corralling its tax-paying citizens into living behind a different set of walls and gates. Left with no choice, Indians are opting for private solutions, no longer believing in political promises. It is seductive to argue that private solutions liberate citizens from the tyranny of public sector inefficiency. The emergence of alternative options only expands choice. As economics Nobel laureate Kenneth Arrow observed, ‘Markets are not, in my opinion, a full solution to any problem. The obvious problem they don’t meet is the concerns of the welfare of individuals who may get lost in the operation of the system – the distributional question.’ [32](#)

Private solutions do not take away the obligation of governments to deliver basic public goods it is obliged to deliver. The bypass of public delivery raises a fundamental question about the role of the state. The legitimacy of the state to collect taxes and legislate laws rests on delivering on the most basic of its obligation. Why must taxpayers pay taxes for services and then pay again to private providers because the state is failing and flailing?

The citizens of India continue to believe in the Constitution of India. It is the politicians of India who are choosing to forget its Preamble.

NOTES

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- It specifies the duties and responsibilities of appropriate governments, local authorities and parents in providing free and compulsory education, and sharing of financial and other responsibilities between the Central and state governments.
- It lays down the norms and standards relating inter alia to pupil-teacher ratios (PTRs), buildings and infrastructure, school-working days, teacher-working hours.
- It provides for rational deployment of teachers by ensuring that the specified pupil-teacher ratio is maintained for each school, rather than just an average for the state or district or block, thus ensuring that there is no urban-rural imbalance in teacher postings. It also provides for prohibition of deployment of teachers for non-educational work, other than decennial census, elections to local authority, state legislatures and Parliament, and disaster relief.

- It provides for appointment of appropriately trained teachers, i.e. teachers with the requisite entry and academic qualifications.
- It prohibits (a) physical punishment and mental harassment; (b) screening procedures for admission of children; (c) capitation fee; (d) private tuition by teachers and (e) running of schools without recognition.
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Seventy years since it became a republic, India has come a long way. However, it is still failing on key counts: water, health, education, power, and law and order.

Piped drinking water for all continues to be a pipe dream; homes and businesses are haunted by power outages; the absence of proper primary healthcare renders the poorest more vulnerable; millions of children coming out of schools lack rudimentary skills; and the protection of families and enterprises is a source of great anxiety.

Instead of depending on the government for these most basic of services, Indians are choosing to invest in the pay-and-plug economy. Across income levels - having internalized the failure of the state to deliver public services -they are opting for private providers, despite the costs. That this is happening even as governments spend more and more taxpayer money every year is the reflection of a harsh reality: there is too much government and too little governance.

But can India sustain such private republics? What are the possible solutions to set right such failures in a landscape scarred by social and economic fault lines? Can the government reinvent itself?

The Gated Republic presents an interrogative view of the history and future of private India.

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